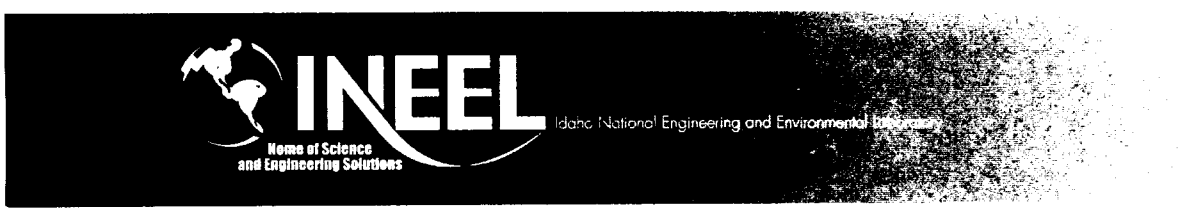
DOE/ID-10987
Revision 1
March 2003

Project No. 22522

U.S. Department of Energy
Idaho Operations Office

Project Execution Plan for the INEEL CERCLA Disposal Facility Complex



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Prepared for the
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ABSTRACT

This Project Execution Plan describes how the Idaho National Engineering and Environmental Laboratory (INEEL) will conduct the design, construction, and startup of the INEEL CERCLA Disposal Facility (ICDF) Complex Project. This plan discusses the ICDF Complex as a whole, which includes the landfill, evaporation ponds, and the Staging, Storage, Sizing, and Treatment Facility. The ICDF Complex is the centralized INEEL facility that will be responsible for the receipt, storage, treatment (as necessary), and disposal of INEEL Comprehensive Environmental Response, Compensation, and Liability Act remediation waste. The ICDF Complex includes functions (facilities) for receiving, weighing, staging and storing, treating, and disposing waste soils and debris. The ICDF Complex will comprise the landfill, evaporation ponds, leachate collection system, staging and storage areas, decontamination facility, administrative facility, and other systems necessary for operations. This plan establishes an agreement between the U.S. Department of Energy Idaho Operations Office and Bechtel BWXT Idaho, LLC, operator of the laboratory, on work deliverables, management processes, project reporting, and performance expectations. This Project Execution Plan supports Critical Decision-2/3 approval, and establishes the technical, schedule, and cost baselines through the completion of the project.

CONTENTS

FIGURES

TABLES

ACRONYMS

A-E	architect-engineer
ALARA	as low as reasonably achievable
AM EM	assistant manager for environmental management
AR	Administrative Record
ARAR	applicable or relevant and appropriate requirement
BBWI	Bechtel BWXT Idaho, LLC
BCP	baseline change proposal
BIC	Balance of INEEL Cleanup
CC	construction coordinator
CD	critical decision
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CM	configuration management
CQA	construction quality assurance
D&D&D	deactivation, decontamination, and dismantlement
DOE	U.S. Department of Energy
DOE-HQ	U.S. Department of Energy Headquarters
DOE-ID	U.S. Department of Energy Idaho Operations Office
DWP	Detailed Work Plan
EAC	estimate at completion
ECF	engineering change form
EDF	engineering design file
EDM/OIS	Electronic Document Management/Optical Imaging System
EDMS	Electronic Document Management System
EPA	U.S. Environmental Protection Agency
ER	environmental restoration

ES&H	environment, safety & health
FE	field engineer
FFA/CO	Federal Facility Agreement and Consent Order
FM/OM	Facility Manager/Operations Manager
FPM	federal project manager
FS	feasibility study
GDE	guide
ICDF	INEEL CERCLA Disposal Facility
ICP	Idaho Completion Project
IDEQ	Idaho Department of Environmental Quality
INTEC	Idaho Nuclear Technology and Engineering Center
INEEL	Idaho National Engineering and Environmental Laboratory
ISMS	Integrated Safety Management System
JSA	job safety analysis
LDR	land disposal restriction
MCP	management control procedure
NEPA	National Environmental Policy Act
OU	operable unit
PBS	project baseline summary
PCB	polychlorinated biphenyl
PEP	Project Execution Plan
PLN	plan
PRD	project requirements document
QPR	quarter project review
R2A2	roles, responsibilities, accountabilities, and authorities
RCRA	Resource Conservation and Recovery Act

RD/CWP	remedial design/construction work plan
RD/RA	remedial design/remedial action
RFP	request for proposal
RI/BRA	remedial investigation/baseline risk assessment
ROD	Record of Decision
SAD	site area director
SO	system operability
SOW	scope of work
SSC	system, structure, or component
SSSTF	Staging, Storage, Sizing, and Treatment Facility
STD	standard
STR	subcontract technical representative
T&FR	technical and functional requirement
TRU	transuranic
WAC	waste acceptance criteria
WAG	waste area group
WBS	work breakdown structure

Project Execution Plan for the INEEL CERCLA Disposal Facility Complex

1. INTRODUCTION

1.1 Purpose

This Project Execution Plan (PEP) provides the fundamental guidelines and expectations of the INEEL CERCLA Disposal Facility (ICDF) Complex Project for detailed engineering, construction, procurement, startup, operations, and closure. The objectives of the document are to:

- Communicate the overall project execution strategy
- Define each key element of the project execution
- Define the roles and responsibilities of the project team and between the project team and other project stakeholders
- Include the principal elements of the project acquisition strategy and plan
- Outline the project management process for compliance with U.S. Department of Energy (DOE) Order 413.3, "Program and Project Management for the Acquisition of Capital Assets."

In addition, the ICDF Complex PEP provides guidelines to ensure consistency and compatibility for all planning aspects of the project. An additional purpose of this PEP is to establish agreement between the U.S. Department of Energy Idaho Operations Office (DOE-ID) and Bechtel BWXT Idaho, LLC (BBWI), the current management and operating contractor for the Idaho National Engineering and Environmental Laboratory (INEEL), on the work-scope deliverables, agreed-upon project management and control processes, reporting, and performance expectations for the ICDF Complex Project. Finally, this PEP will establish the project performance baseline including the technical scope, cost, and schedule.

1.2 Background

The INEEL (see Figure 1-1), including the Idaho Nuclear Technology and Engineering Center (INTEC), was placed on the National Priorities List in November 1989. A Federal Facility Agreement and Consent Order (FFA/CO) (DOE-ID 1991) was negotiated with the U.S. Environmental Protection Agency (EPA) and Idaho Department of Environmental Quality (IDEQ) (formerly Idaho Department of Health and Welfare, Division of Environmental Quality) to direct cleanup activities at the INEEL. The FFA/CO Action Plan divided the INEEL into 10 waste area groups (WAGs) for management purposes. In addition, each of these WAGs was subdivided into operable units (OUs).

In order to implement the FFA/CO, a series of small and focused investigations were conducted at INTEC (formerly known as the Idaho Chemical Processing Plant [ICPP]), WAG 3. These focused investigations were used to identify the contamination present at the various release sites and identify the release sites requiring further investigation. These initial investigations were memorialized in the OU 3-13 Remedial Investigation/Baseline Risk Assessment (RI/BRA) Report (DOE-ID 1997a). During the development of the OU 3-13 RI/BRA Report, thirty-six sites at the INTEC were identified with unacceptable ($>10^{-4}$) risk. These risks were calculated using the Comprehensive Environmental Response,

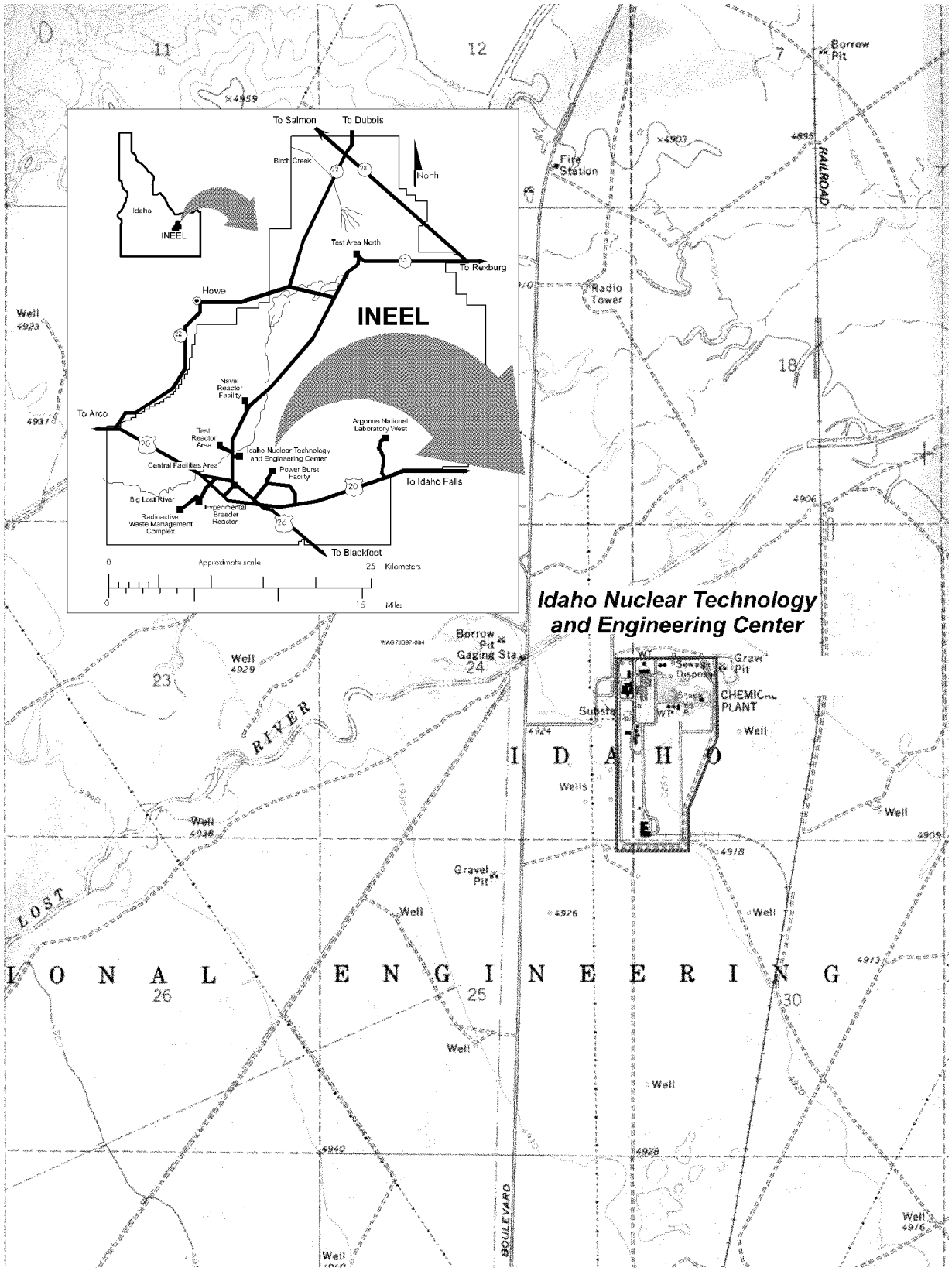

Figure 1-1. Map of INEEL showing location of INTEC and facilities.

Compensation, and Liability Act (CERCLA) methodologies for inhalation, ingestion, and direct exposure pathways along with impacts on ecological receptors. Only sites presenting an unacceptable risk were carried forward for evaluation of remedial action alternatives.

The majority of the release sites presenting unacceptable risks involve releases into the surface soils. To better manage the development of remedial action alternatives, the unacceptable release sites were grouped into seven remediation groups. These groupings were based on the type of release site and geographic proximity to other sites. The intent of the alternatives evaluation was to find alternatives that could reduce the risks to acceptable levels. These remedial alternatives were evaluated in the OU 3-13 Feasibility Study (FS) Report (DOE-ID 1997b) and FS Supplement Report (DOE-ID 1998a). One of the alternatives evaluated was the design, construction, operations, closure, and long-term surveillance/monitoring of a new on-Site disposal facility, which was referred to as the "on-Site disposal" alternative. Other alternatives considered including no action, institutional controls, containment in place (capping), and off-Site disposal.

The background, risks, and remedial alternatives were summarized along with the selection of a preferred alternative were presented in the Proposed Plan (DOE-ID 1998b). The preferred alternative presented was the "on-Site disposal" alternative and described as the ICDF, which was a component of the Group 3 (Other Surface Soils) remedial action alternative. Following the public comment period of the Proposed Plan, a CERCLA Record of Decision (ROD) was prepared selecting the remedial alternatives for each of the remedial action groups as presented in the Proposed Plan. The selected remedy in the OU 3-13 ROD (DOE-ID 1999) was the excavation, treatment as necessary, and disposal at the "on-Site disposal" for the Group 3 soils and debris. The selection of remedial alternatives was memorialized with the signature of the DOE-ID, EPA, and IDEQ for the OU 3-13 ROD.

1.3 Project History

Upon signature of the OU 3-13 ROD, the remedial actions selected were divided into the various projects necessary for implementation of the decisions and actions specified. All of the remedial action projects selected in the OU 3-13 ROD were presented in the OU 3-13 Remedial Design/Remedial Action (RD/RA) Scope of Work (SOW) (DOE-ID 2000a). The OU 3-13 RD/RA SOW was developed to the scope, schedule, and approach for these various projects, including the ICDF Complex Project. Also in the OU 3-13 RD/RA SOW, the ICDF Complex Project was divided into two subprojects. These two subprojects are: 1) the ICDF landfill and evaporation pond (hereafter referred to as ICDF) and 2) the Staging, Storage, Sizing, and Treatment Facility (SSSTF).

The design of the ICDF portion of the project has been conducted in five phases. The first phase for the ICDF design was to develop the ICDF Conceptual Design (DOE-ID 2000b). To support the ICDF Conceptual Design, the Technical and Functional Requirements (TFR-71) along with the preliminary fate and transport modeling for contaminant migration from the ICDF (EDF-ER-170). In addition, a review of reactive material for permeable barriers (DOE-ID 2000c) and sorption coefficients for selected contaminants (DOE-ID 2000d) were developed. Also, the expected inventory of waste constituents for the disposal facility (DOE-ID 2000e) was documented.

The second phase for ICDF was to develop the 30% (Title I) design (DOE-ID 2001a). Included with the ICDF 30% design were engineering design files (EDFs) dealing with refined disposal inventory (EDF-ER-264), cover modeling (EDF-ER-279, Rev. 0), fate and transport modeling (EDF-ER-275, Rev. 0), stability (EDF-ER-268, Rev. 0), consolidation (EDF-ER-266, Rev. 0), subsidence (EDF-ER-267, Rev. 0), and leachate generation (EDF-ER-269), along with other design issues.

Concurrent with the second phase was the third phase dealing with the design for the excavation and test pad activities (DOE-ID 2001b). This document included the construction quality assurance

(CQA) plan (DOE-ID 2001c) and construction waste management (DOE-ID 2001d) along with analysis of the facility disposal volume (EDF-ER-265), soil amendment study (EDF-ER-272), and technical specifications for construction (SPC-1475). Following finalization of the excavation and test pad document, the excavation activities for landfill and evaporation pond were conducted. In addition, a test pad was constructed and tested.

The fourth phase of the ICDF design was the 60% design components (DOE-ID 2001e). Included with this design report were EDFs on ecological risk assessment (EDF-ER-311), National Emission Standards for Hazardous Air Pollutants (NESHAP) modeling (EDF-ER-290), cover modeling (EDF-ER-279, Rev. 1), and fate and transport modeling (EDF-ER-275, Rev. 1).

The fifth phase for ICDF design was the development of the ICDF Remedial Design/Construction Work Plan (RD/CWP) (DOE-ID 2002a). Included in this RD/CWP were EDFs concerning cover modeling (EDF-ER-279, Rev. 2), fate and transport modeling (EDF-ER-275, Rev. 2), stability (EDF-ER-268, Rev. 1), consolidation (EDF-ER-266, Rev. 1), subsidence (EDF-ER-267, Rev. 1), and leachate chemistry (EDF-ER-274), along with other design issues. Also, the Idaho Administrative Procedures Act air compliance (EDF-ER-315) EDF was included in this RD/CWP. In addition, plans were provided on CQA (DOE-ID 2001f), operation and maintenance (DOE-ID 2001g), and waste management (DOE-ID 2001h).

Also, in developing the design for the ICDF, it was recognized that additional information on the soils beneath the ICDF was required. This lead to the implementation of a geophysical and geotechnical investigation. The results were presented in the ICDF Geotechnical Report (DOE-ID 2001i) as supplemental information for the ICDF Conceptual Design.

The design of the SSSTF portion of the project has been conducted in three phases. The first phase for the SSSTF design was to develop the SSSTF Conceptual Design (DOE-ID 2000f). To support the SSSTF Conceptual Design, the Technical and Functional Requirements (TFR-17) were developed.

The second phase for SSSTF was to develop the 30% (Title I) design (DOE-ID 2000g). Included with the ICDF 30% design were EDFs dealing with waste storage and staging (EDF-ER-1545), preliminary hazard classification (EDF-ER-1546), SSSTF/ICDF operational scenario and process flows (EDF-ER-1547), and the siting study (EDF-ER-1548).

The third phase for SSSTF design was the development of the SSSTF RD/CWP (DOE-ID 2002b). Included in this RD/CWP were EDFs concerning soil stabilization treatment (EDF-ER-296), debris treatment (EDF-ER-1730), fire water system (EDF-1948), and electrical load (kEDF-2747) along with other design issues. Also, the SSSTF worker risk EDF (EDF-ER-302) was included in this RD/CWP. In addition, plans were provided on CQA (PLN-873), operation and maintenance (DOE-ID 2001j), and waste management (DOE-ID 2001k).

Starting with the 30% (Title I) designs, the waste acceptance criteria (WAC) for the ICDF landfill (DOE-ID 2001l), ICDF evaporation pond (EDF-1549 and DOE-ID 2001m), and SSSTF (EDF-1551) have been developed. For the ICDF portion of the project, the ICDF landfill (DOE-ID 2001n) and ICDF evaporation pond (DOE-ID 2001o) were refined at the 60% design stage. At the 90% design stage, included in the RD/CWP, the ICDF landfill (DOE-ID 2002c), ICDF evaporation pond (DOE-ID 2002d), and SSSTF (DOE-ID 2002e) WACs were further refined.

2. MISSION NEED

The ICDF Complex Project is needed to fulfill the requirements and project scope identified in both the OU 3-13 ROD and the OU 3-13 RD/RA SOW (DOE-ID 2000a). During the implementation of the INEEL CERCLA remediation projects, a variety of waste types (low-level, mixed low-level, and hazardous, including polychlorinated biphenyl [PCB] wastes) will be generated and require storage, treatment, and disposal. Currently, the INEEL identified the need for disposal capacity of at least 483,000 cubic yards for dealing with the wastes expected to be generated as a result of the INEEL CERCLA remediation projects over the next ten years. As result of this volume being considered a minimum, based on historical remediation projects at the INEEL, an ICDF landfill capacity of 510,000 cubic yards is required. Operations of the ICDF Complex will also require additional support facilities to stage, store, and treat the waste as necessary prior to disposal along with the administrative functions necessary for operation of a mixed low-level waste landfill.

2.1 Project Objectives

The ICDF Complex will handle the INEEL's CERCLA generated waste. Based on the existing and expected decisions (RODs), there is a large volume of waste that will be generated and require disposal. It was determined that it was more cost effective to construct a new on-Site disposal facility with necessary support facilities than to package, transport, and dispose of the waste off-Site. Therefore the ICDF Complex is the centralized INEEL facility that will be responsible for the receipt, storage, treatment (as necessary), and disposal of INEEL CERCLA remediation (remedial and removal actions) waste. Within the ICDF Facility, there are functions (facilities) for receipt, weighing, staging and storage, treatment, and disposal of waste soils and debris.

The specific objectives for the ICDF Complex Project are listed below:

- Receive INEEL CERCLA solid streams from across the INEEL
- Stage INEEL CERCLA remediation waste streams prior to disposal in the ICDF landfill, as necessary
- Store INEEL CERCLA remediation waste streams prior to treatment or packaging for off-Site disposal, as necessary
- Stabilize waste soils waste streams through treatment INEEL CERCLA remediation waste to meet the Resource Conservation and Recovery Act (RCRA) land disposal restrictions (LDRs) as necessary
- Treat INEEL CERCLA debris waste streams to meet the alternate debris treatment standards under RCRA
- Permanently dispose of INEEL CERCLA waste streams in an on-Site landfill or evaporation pond, as appropriate
- Decontaminate the equipment used for the operations of the ICDF Complex or waste receipt activities
- Perform the waste verification and quality assurance requirements for acceptance of INEEL CERCLA waste streams

- Conduct the required administrative functions for the operation of the ICDF Complex, including record keeping.

2.2 Project Constraints and Assumptions

Appendix A summarizes the constraints and assumptions that have been used in developing the project scope of effort, work plan, cost estimate, and schedule. These constraints and assumptions are organized into the following sections: scope, cost, and schedule. The project work plan, cost estimate, and schedule are not valid if these constraints and assumptions are not fulfilled.

The following major items are excluded from the scope of the project, its estimated costs, and associated contingency:

Other Treatment Processes – The ICDF Complex Project assumes that the treatment processes presented in the SSSTF RD/CWP and ICDF RD/CWP are sufficient to meet all of the treatment methods and capacity needed at the ICDF Complex. Treatment process other than those presented in the SSSTF RD/CWP and ICDF RD/CWP is not included in the ICDF Complex Project scope. Additional treatment methods or larger capacities will require adding additional technical baseline scope, baseline costs, and baseline schedule to the project for the additional design, construction, start-up, operating, and closure activities.

Waste Receipt – The ICDF Complex Project assumes that the waste received at the ICDF Complex will meet the requirements specified in the various ICDF Complex WAC documents. Also the ICDF Complex assumes that the generating project is responsible for the excavation, packaging, and transportation of the waste to the ICDF Complex. Waste received at the ICDF Complex not meeting the ICDF Complex WAC documents will require additional technical baseline scope, baseline costs, and baseline schedule of the generating project for the dealing with these wastes prior to disposal. In addition, the ICDF Complex does not assume that wastes received will be sent off-Site for disposal and therefore no costs are included for off-Site disposal.

DOE Order 413.3, Critical Decisions – The ICDF Complex Project assumes that critical decisions based on DOE Order 413.3 are made at the DOE field office level and not elevated to U.S. Department of Energy Headquarters (DOE-HQ). The project also assumes that the Critical Decision (CD) 2/3 is completed to allow the project to remain on the ICDF Complex Project schedule which permits construction of the ICDF Complex to begin by May 15, 2002, for activities not covered by CD-2/3a, and for the construction activities to be completed by July 15, 2003. The ICDF Complex Project assumes that CD-4a (Start of ICDF landfill Cell 1, evaporation pond, and SSSTF operations) will be accomplished by August 22, 2003. Also, the ICDF Complex Project assumes that CD-4b (Start of ICDF landfill Cell 2 operations) will be accomplished by January 27, 2006. Finally, the ICDF Complex Project assumes that the technical, cost, and schedule baselines are set at the completion of CD 2/3 in accordance with DOE Order 413.3.

The technical, cost, and schedule baselines are also included as appendixes to this PEP.

3. PROJECT DESCRIPTION

3.1 General Description

The ICDF Complex is a facility consisting of a landfill, two evaporation ponds, staging and storage areas, a decontamination facility, a treatment facility, utilities required to operate, and an administrative facility (See Figure 3-1). The ICDF Complex is able to deal with hazardous, low-level, mixed low-level, transuranic (TRU) (limited quantities for temporary storage), and mixed TRU (limited quantities for temporary storage) waste streams from INEEL CERCLA remediation projects (remedial and removal actions).

The ICDF landfill is an engineered disposal facility with a disposal capacity of 510,000 cubic yards that will be constructed in two phases (each phase having approximately 255,000 cubic yards of disposal capacity). It is being designed and constructed to meet the requirements of DOE Order 435.1, RCRA subtitle C (hazardous waste), and Toxic Substances Control Act PCB design and construction standards. The landfill will be closed by constructing a multi-layer engineered containment barrier (cap) with an expected design life of 1,000 years. The landfill will accept waste soils and debris from INEEL CERCLA remediation projects (remedial and removal actions) for disposal.

The ICDF evaporation ponds are expected to undergo clean closure when no longer needed. They will be used to treat and dispose of leachate from the operation of the ICDF landfill and other aqueous waste from the ICDF Complex along with INEEL CERCLA aqueous liquid wastes (e.g., well purge water, well development water).

The ICDF staging and storage areas are for temporary staging of waste material prior to disposal in the ICDF landfill or evaporation ponds. In addition, if the waste does not meet the WAC of the ICDF landfill or evaporation ponds, the staging and storage areas will be used to stage waste for treatment to meet the WACs and/or for packaging for off-Site disposal. There is also a contaminated equipment storage area for staging equipment prior to decontamination.

The ICDF decontamination facility is a preengineered steel building containing decontamination water sprays and collection sumps for decontamination of equipment. This facility also includes the change rooms, doff/donning areas, and other areas necessary for operation of a radiological/hazardous waste facility.

The ICDF treatment facility is an area within the decontamination facility for treating waste soils by soil stabilization. This will be accomplished using a pug-mill and the addition of cement chemicals for stabilization of the waste soil to meet the RCRA LDRs, as necessary. In addition, the ICDF treatment facility also will treat boxed debris waste using micro-encapsulation technology by filling the void areas in the boxes with grout.

The ICDF Complex utilities include the potable water, raw water, fire water, sewer, electrical power, telecommunications, and electronic data transfer components of the ICDF Complex. All of these utilities except the electrical power will be received from the INTEC. Electrical power will be received from outside of INTEC.

The ICDF Complex administrative facility is the receiving facility for the ICDF Complex. This facility consists of the administrative building housing the management and office personnel, waste tracking system, the weigh scales, and the physical access controls to the ICDF Complex.

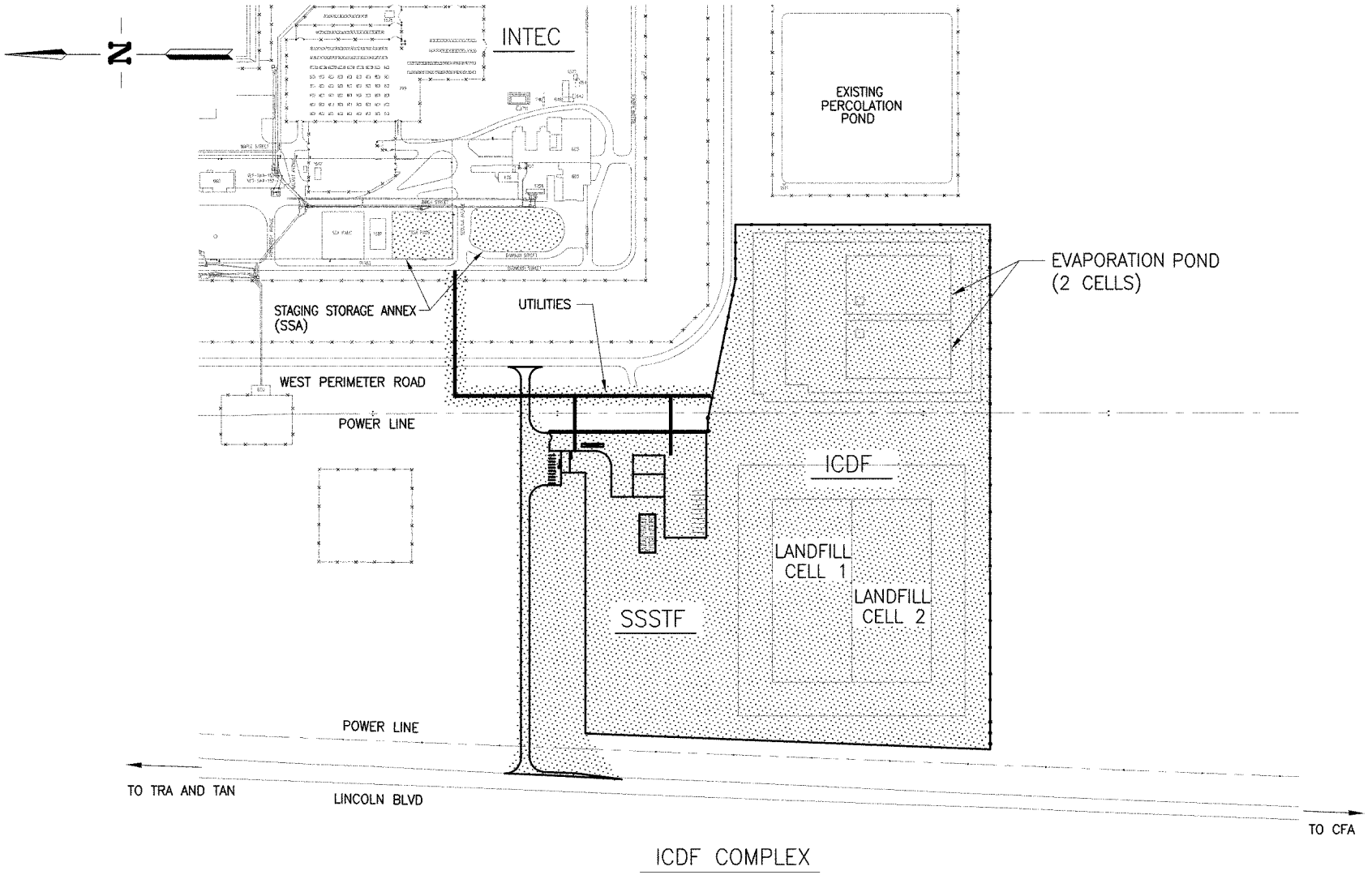

Figure 3-1. Location and plan-view layout of the ICDF Complex.

3.2 Project Life Cycle and Critical Decisions

Planning and executing project activities is done in accordance with the guidelines provided in DOE Order 413.3, "Program and Project Management for the Acquisition of Capital Assets," as specified for a CERCLA project. CERCLA specifies statutory time limits, potential fines, and documentation requirements. To accomplish the project goals in accordance with the regulatory milestones, the project team is using a series of critical decisions (CDs) based on the guidance provided in DOE Order 413.3. The CDs for the ICDF Complex Project are shown in Table 3-1 and are discussed as a function of the project phase in the following paragraphs.

Table 3-1. Project schedule for design and construction of the ICDF Complex Project.

Project Phase	Subtask	Critical Decision	Status
Planning	*Site Evaluation*	Approve Mission Need—CD-0	This task was completed October 1998 (DOE-ID 1997a, 1997b, and 1998a).
	Characterization, Feasibility Reviews, and Remedy Selection	Approve Preliminary Baseline Range—CD-1	This task was completed October 1999 (DOE-ID 1998b and 1999).
Execution	*Engineering*		
	Develop baseline for project control		This task was completed February 2000 (DOE-ID 2000a).
	SSSTF Conceptual design		This task was completed July 2000 (DOE-ID 2000f).
	ICDF Conceptual design		This task was completed November 2000 (DOE-ID 2000b).
	Award of ICDF landfill/evaporation pond design/build contract		This task was completed January 2001 (BBWI 2001a).
	SSSTF Preliminary Design		This task was completed December 2000 (DOE-ID 2000g)
	ICDF Preliminary Design		This task was completed July 2001 (DOE-ID 2001a).
	ICDF Excavation and Test Pad Final Design		This task was completed July 2001 (DOE-ID 2001b).
	Draft Final SSSTF Title II Design to Agencies		This task was completed December 2001 (DOE-ID 2002b).
	Award of SSSTF construction contract		This task was completed May 2002.

Table 3-1. (continued).

Project Phase	Subtask	Critical Decision	Status
	Draft ICDF Title II Design to Agencies		This task was completed December 2001 (DOE-ID 2002a). Draft final issued April 2002.
	Draft ICDF Complex Remedial Action Work Plan to Agencies		This task was completed February 2003.
	Construction		
	Initiate Site Preparation Activities	Approve start of field work and construction—partial CD-2/3a	This task was completed July 2001 (Cook 2001).
	Initiate ICDF Complex construction	Approve performance baseline and start of field work and construction—CD-2/3	This task was completed May 2002.
	Complete ICDF Cell 1 construction		This task is planned for April 2003.
Mission	Initiation of Startup		This task is planned for August 2003.
	Operations	Approve start of ICDF landfill Cell 1 and evaporation pond—CD-4a	This task is planned for August 2003.
		Approve start of SSSTF operations--CD-4a-1	This task is planned for December 2001.
		Approve start of ICDF landfill Cell 2 operations—CD-4b	This task is planned for January 2006.

3.2.1 Planning Phase

The goal of the planning phase is to develop the mission need and general project scope along with sufficient cost information to support the decision process for authorizing subsequent activities. Two activities comprise the project planning phase. These two activities are the "site evaluation" and "characterization, feasibility review, and remedy selection." The planning phase of a project under DOE Order 413.3 leads to approval of mission need (CD-0) and approval of the preliminary baseline range (CD-1).

- Approval of Mission Need (CD-0): The "site evaluation" component of planning was accomplished with the development of the OU 3-13 RI/BRA Report (DOE-ID 1997a), the OU 3-13 FS Report (DOE-ID 1997b), and the FS Supplement Report (DOE-ID 1998a). These reports identified the need for the mitigating the risk posed by the INEEL CERCLA release sites at INTEC. In addition, the FS and FS Supplement Reports evaluated alternatives for mitigating the risks, including the design, construction, operation, closure, and long-term monitoring of a new on-Site disposal facility. While no actual alternative was recommended in the FS and FS Supplement Reports, the alternatives were evaluated against each other and the on-Site disposal alternative ranked the best alternative. CD-0 was achieved in October 1998 with the publication of the Final FS Supplement Report.

- Approval of Preliminary Baseline Range (CD-1): The second subphase of planning is the "characterization, feasibility review, and remedy selection". This was accomplished with the

development of the OU 3-13 Proposed Plan (DOE-ID 1998b) and OU 3-13 ROD (DOE-ID 1999). The OU 3-13 Proposed Plan presented a summary of the release site risks, remedial action alternatives evaluated with the evaluations, and proposed remedies for the various release sites presenting unacceptable risks. Following the public comment period on the OU 3-13 Proposed Plan, the OU 3-13 ROD was developed. This document presented the information in the OU 3-13 Proposed Plan, but in greater detail than the OU 3-13 Proposed Plan and less than the OU 3-13 RI/BRA, FS, and FS Supplement Reports. The OU 3-13 ROD memorialized the selected remedies for the various remedial action projects for OU 3-13. CD-1 was achieved in October 1999 with the publication of the Final OU 3-13 ROD.

3.2.2 Execution Phase

In the execution phase for this project, there are two sub-phases for the project. These sub-phases are the engineering and construction aspects of the project. As discussed above in the Project History (See Section 1.3), the ICDF Complex Project has progressed from preconceptual planning (OU 3-13 RD/RA SOW) through the development of Title II designs (ICDF RD/CWP and SSSTF RD/CWP). Under DOE Order 413.3, projects typically combine CD-2 (Approve Performance Baseline) and CD-3 (Approve Start of Field Work/Construction) into a combined single decision point. For the ICDF Complex Project, it has been necessary to use two phases in the CD-2/3 process. The first phase of the CD-2/3 process was a partial CD-2/3 and the second phase will be the complete CD-2/3.

- Partial CD-2/3a—Early Excavation and Test Pad Construction: This CD approved the ICDF Complex Project to move forward with the excavation activities for ICDF landfill Cell 1 construction and construction/testing of the test pad for the clay liner material. This CD was approved in July 2001 (Cook 2001).

- CD-2/3—Approve Performance Baseline and Approve Start of Field Work/Construction: This critical decision will set the project baselines as defined in this PEP. Also, an external independent review was conducted for the ICDF Complex Project to support the CD-2/3 process. Currently, the designs activities are completed from a DOE-ID and BBWI perspective, but are undergoing EPA and IDEQ review and comment incorporation process as defined in the FFA/CO. Future comments received from the EPA and IDEQ are not expected to significantly change (remain within contingency) the scope, schedule, or cost of the ICDF Complex Project. This CD was completed in May 2002.

3.2.3 Mission Phase

During the mission phase (operations subtask), the facility will undergo the acceptance process prior to turnover for operations. The facility will operate for a time period necessary to accomplish the project mission and objectives.

- CD-4a—Start of Operations for ICDF landfill Cell 1, and Evaporation Pond: The prerequisites for CD-4a include: construction completed, final documented safety analysis completed, inspections completed, corrective actions completed, and startup assessment successfully conducted.

- CD-4a-1—Start of operations for the SSSTF. The prerequisites for CD-4a-1 include: construction completed, final documented safety analysis completed, inspections completed, corrective actions completed, and startup assessment successfully conducted.

- CD-4b—Start of Operations for ICDF landfill Cell 2: The prerequisites for CD-4b include: construction completed, inspections completed, corrective actions completed, and startup assessment successfully conducted.

Authorization for facility closure along with the decontamination and decommission components will be accomplished in a similar process to critical decisions following completion of the project mission and objectives.

4. MANAGEMENT, ORGANIZATION, AND INTERFACES

4.1 Organizational Structure, Responsibilities, and Interfaces

The following paragraphs discuss the organizational structure, responsibilities, and interfaces associated with the ICDF Complex Project. The key organizations required to complete the ICDF Complex Project include DOE and BBWI. Also, key interfaces with the regulatory agencies and stakeholders are discussed. Figure 4-1 presents the overall organizational structure for the ICDF Complex Project while focusing on the interfaces between the various DOE organizations, the BBWI project management/engineering, regulatory agencies, and stakeholders.

4.1.1 U.S. Department of Energy

The basic framework for roles and responsibilities for program and project management at the various operating levels within the DOE-HQ for this project are consistent with DOE Order 413.3. Accordingly, line managers, extending from the Secretary of Energy to the Deputy Secretary and Under Secretary, the Program Secretarial Officer, and the HQ Program Manager will be held responsible and accountable for successfully developing, executing, and managing the project within the baseline (cost, schedule, and scope).

The Idaho Operations Office manager, the federal project manager (FPM), and the contractor project manager will be held responsible and accountable for successfully developing, executing, and managing the project within the baseline (cost, schedule, and scope).

4.1.1.1 Idaho Operations Office Manager. Reporting directly to the program secretarial officer, the Idaho Operations Office manager has line accountability for contract management of all site program/project execution. The Idaho Operations Office manager serves as the acquisition executive for the ICDF Complex Project.

4.1.1.2 Federal Project Manager. The roles and responsibilities of the FPM are as follows:

- Responsible and accountable for project management activities of the project
- Responsible and accountable for planning, implementing, and completing the project using a systems approach
- Main point of contact with DOE regarding project issues
- Acceptance and approval of deliverables.

4.1.1.3 DOE-ID Assistant Manager for Environmental Management. The assistant manager for environmental management (AM EM) is assigned responsibility for the execution and planning of the EM projects at the INEEL with principal focus on cleanup and remediation of the environmental and waste zone material legacy from cold-war production operations and new waste zone material originating from cleanup operations. This responsibility includes:

- Ensuring that all programs and projects are executed in a way that is cost-effective while also protecting worker and public health and safety and the environment

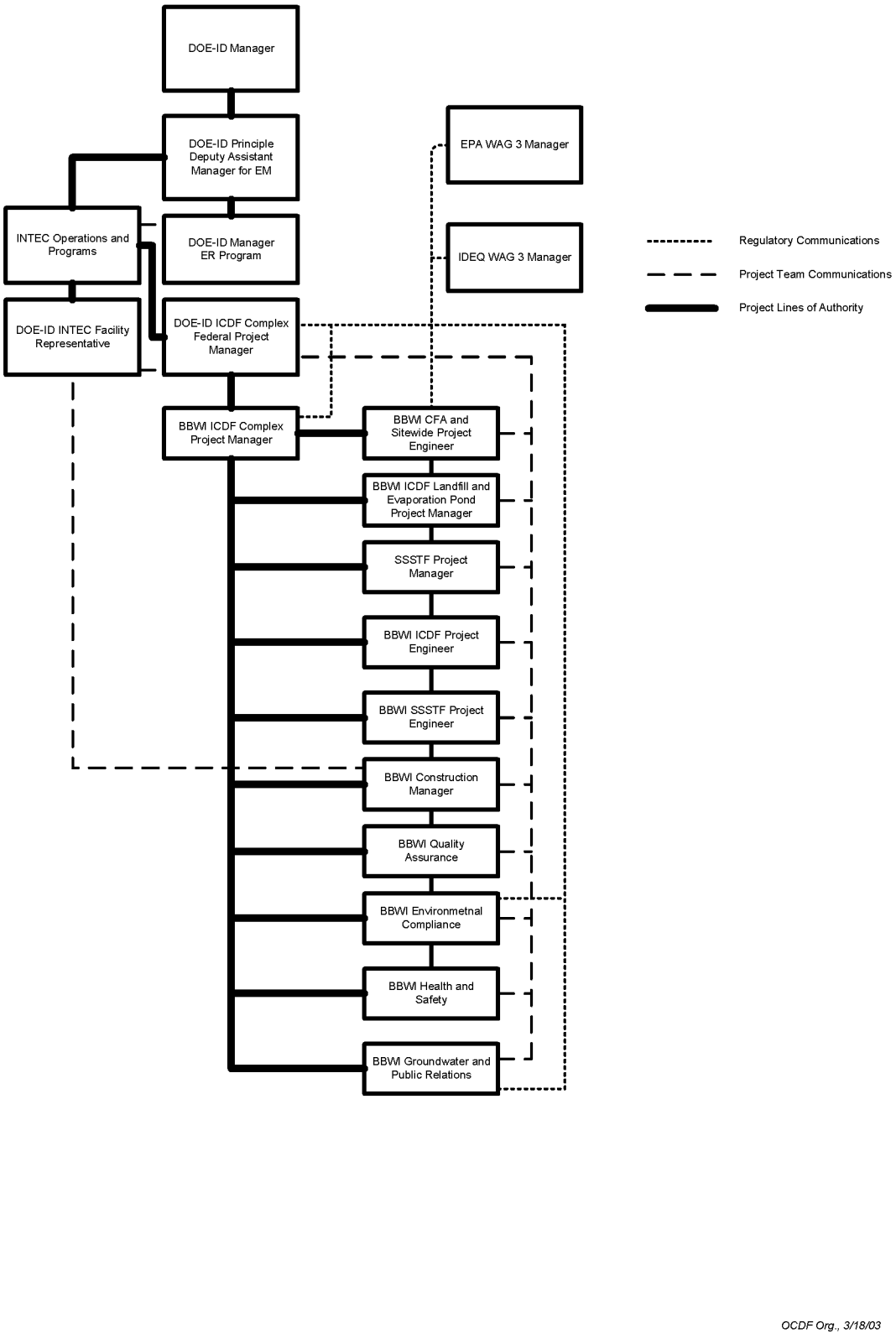

Figure 4-1. Overall organizational structure for the ICDF Complex Project showing the interaction between DOE-ID, DOE-HQ, BBWI, EPA, IDEQ, and selected levels of subcontractors.

- Ensuring that all work is performed in compliance with applicable federal, state, and local laws and regulations including the deadlines of the FFA/CO between the DOE, EPA, and the State of Idaho

- Maintaining appropriate relations with state and Federal government agencies, including HQ EM programs, private and scientific organizations, and stakeholder organizations.

4.1.1.4 Director, Environmental Restoration Division. The director for ER Programs is responsible for:

- Managing the ER Program, including technical oversight, budgetary control, and regulatory agency interface

- Reducing risks posed to INEEL workers, the public, and the environment by releases of hazardous and radioactive materials to soil and groundwater

- Determining risk and selecting remediation approaches, as defined by CERCLA, as agreed on in the FFA/CO for the INEEL

- Coordinating any Hazardous Waste Management Area corrective action or CERCLA response action to the release of hazardous or radioactive materials to soil and groundwater.

4.1.1.5 Assistant Manager for Technical Support. The assistant manager for technical support is responsible for providing program support in the areas of environmental compliance and permitting and environmental monitoring. The project will utilize subject matter experts from this organization in support of review and approval of the Nonnuclear Environment Safety and Health (ES&H) Plan and to regulate the contractor's performance of the non-nuclear safety work scope. Resources from the Quality Assurance and Security Division will also be required to assist the FPM.

4.1.2 ICDF Complex Project Organizational Structure

The project execution contractor for the ICDF Complex Project is BBWI. Management of the ICDF Complex Project is the responsibility of the ICDF Complex project manager, who reports to the Project Director. The project organizational structure of the project is shown in the simplified chart in Figure 4-2. The management, organization, and institutional safety structures employed to ensure safe operation will be the responsibility of the ICP BIC Facility/Operations Manager.

4.1.3 BBWI Organizational Responsibilities

This subsection describes the DOE and INEEL organizations and responsibilities for managing project activities. Responsibilities include significant project interfaces, lines of authority, responsibilities, accountabilities, and communication. BBWI is responsible for environmental remediation at the INEEL. The project manager reports directly to the BIC Project Director. The RD/RA and overall project management for the project is led by BBWI with support from subcontractors.

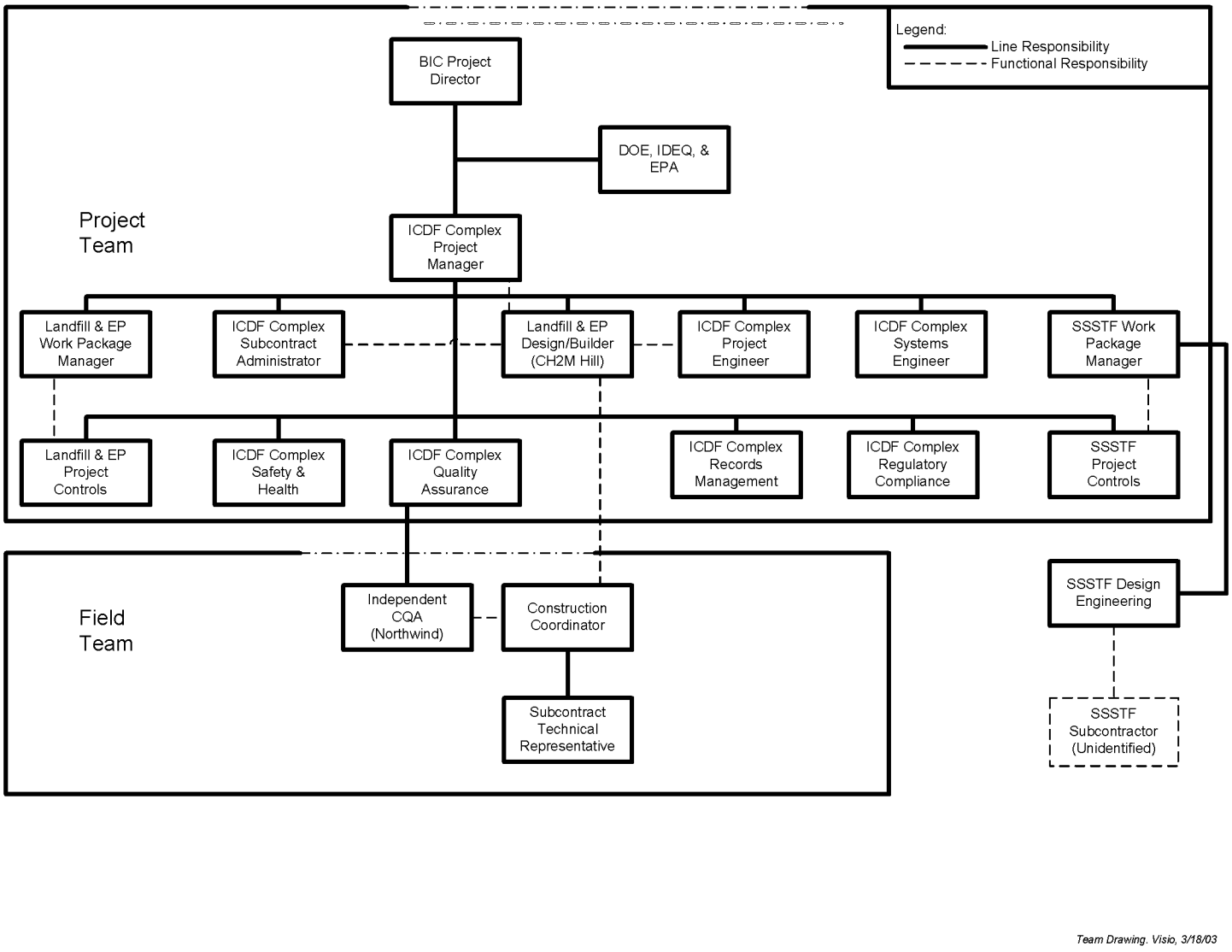

Figure 4-2. Organizational chart for the ICDF Complex Project showing the interaction and responsibilities between BBWI and various subcontractors.

4.1.3.1 *Project Director, Balance of INEEL Cleanup (BIC).* The director is responsible for:

- Managing the BIC Program, including technical oversight, budgetary control, and regulatory agency interface
- Reducing risks posed to INEEL workers, the public, and the environment by releases of hazardous and radioactive materials to soil and groundwater
- Determining risk and selecting remediation approaches, as defined by CERCLA, as agreed on in the FFA/CO for the INEEL
- Coordinating any Hazardous Waste Management Area corrective action or CERCLA response action to the release of hazardous or radioactive materials to soil and groundwater.

4.1.3.2 *ICDF Complex Project Manager.* The project manager for the project has overall responsibility for project execution, budgets and schedule, and to the customer and management's performance expectations. These responsibilities include:

- Managing, coordinating, and administering the project from the conceptual stages through planning, engineering, procurement, construction, start-up, and project closeout
- Using knowledge of engineering, procurement, and industry processes (e.g., construction, operations, research & development, and business systems) throughout the project to ensure project scope is accomplished, schedules are met, and work is completed within budget
- Supporting meetings and presentations to customers
- Managing the development of budgets and schedules, monitoring progress, and initiating action to ensure project objectives and schedules are met and work is performed within budget
- Executing scope within cost and schedule
- Resolving problems and coordinating the final turnover of the project to operations
- Providing leadership for the development and maintenance of a high performance project team
- Promoting an open and informal communication environment, developing mutual trust and teamwork, and facilitating employee self-development
- Establishing and maintaining strong and effective customer relations
- Assisting in the training of new project managers and team members through both formal training and on-the-job training
- Anticipating change and adjusting promptly and effectively
- Taking the lead in working with all departments including engineering, planning and controls, procurement, construction, and other services as required for the project.

4.1.3.3 Project Engineer. The project engineer is responsible to the project manager for providing day- to-day representation for the management and coordination of the engineering activities for the project. Specific responsibilities include:

- Providing design management
- Developing design schedules and budgets
- Designing to cost
- Identifying design issues and proposing resolutions to project management
- Ensuring that engineering and design conform to applicable codes and standards
- Coordinating design engineering, safety analysis, criticality, fire hazards analysis, and applied systems engineering
- Providing status on work accomplished in support of the reporting process.

4.1.3.4 Project Procurement Supervisor. The project procurement supervisor is responsible to the project manager for providing day-to-day representation for the management and coordination of the procurement activities for the project. Specific responsibilities include:

- Directing the project procurement function, including procurement contract formation, vendor document submittal, supplier quality (inspection), and receipt inspection
- Monitoring major procurement control documents
- Establishing controls for periodic review and evaluation of supplier and subcontractor performance
- Coordinating with principal project interfaces: engineering, construction, and operations
- Verifying compliance with contract requirements.

4.1.3.5 Construction Manager. The construction manager is responsible to the project manager for the overall coordination and management of construction activities for the project. Specific responsibilities include:

- Coordinating constructability reviews of the design documents
- Developing and implementing construction schedules including integration of long-lead procurement
- Working within established budgets and schedule, processing change controls as needed, and providing progress support and input to the project cost and schedule tracking tools
- Managing construction subcontractors day-to-day
- Ensuring that the necessary quality inspections take place in accordance with applicable procedures, and that quality issues are resolved

- Maintaining a safe workplace in compliance with BBWI procedures and requirements
- Supporting construction component testing and turnover to operations; supporting startup test as requested.

4.1.3.6 Construction Coordinator Roles and Responsibilities. The construction coordinator (CC) is responsible for providing key information and decisions during project planning and design concerning constructability issues and overall construction management and contracting strategies. The CC has primary responsibility for managing the construction phase from design completion to construction closeout. Other responsibilities include:

- Managing progress on work packages for cost, schedule, and technical performance for the construction phase of the project
- Serving as point of contact for all safety issues
- Resolving claims and negotiating change orders (with appropriate input from the project manager, design team leader, purchasing, and the inspectors)
- Reviewing and monitoring the construction contractor schedule and overall performance, and enforcing applicable contract requirements
- Coordinating dispute resolution between the contractor and BBWI.

4.1.3.7 Construction Field Engineer Roles and Responsibilities. The construction field engineer (FE) is responsible for providing information to and assisting the CC during project planning and design with respect to the constructability issues and overall construction management and contracting strategies. The construction FE has primary responsibility for working with the engineering design group during the construction phase from design completion to construction closeout. Other responsibilities include:

- Providing input and feedback to the project team on current construction trends
- Managing contractor construction changes
- Requesting design support to resolve design discrepancies
- Providing quality inspection plan for Safety Class IV construction
- Ensuring that Safety Class IV quality inspections are completed
- Interpreting drawings and specifications
- Requiring an as-built set of construction drawings to be maintained on-Site per contract requirements.

4.1.3.8 Subcontract Technical Representative Roles and Responsibilities. The subcontract technical representative (STR) coordinates the activities of the inspection team on behalf of the construction management organization. Specific responsibilities include:

- Reviewing and approving contractor invoices

- Resolving claims and negotiating change orders (with appropriate input from the project manager, CC, design team leader, purchasing, and the inspectors)
- Enforcing terms and conditions of contracts
- Enforcing and coordinating ES&H requirements and activities, and overseeing compliance with DOE Order 5480.9a, "Construction Safety and Health Program"
- Managing emergency and accident response and coordination
- Conducting ES&H inspections
- Performing contract close-out
- Coordinating and administering contract warranty issues
- Participating in quality assurance reviews during design for constructability issues.

4.1.3.9 Facility Manager/Operations Manager. The facility manager/operations manager (FM/OM) is responsible to the project manager for the oversight of all subcontractor operations and maintenance. During work activities, the FM/OM is responsible for ensuring the subcontractor executes work in a safe, proper, and efficient manner and is fully compliant with the principles of ISMS. The FM/OM will routinely communicate with management in all areas of the company to identify barriers to successful application of work execution standards and ensure corrective actions to remove these barriers. In addition, the FM/OM is also accountable to the Complete Balance of INEEL Cleanup Operations Director for the following responsibilities:

- Ensure subcontractor implementation of and compliance to applicable administrative, operating and maintenance procedures
- Ensure understandable, current and accurate safety basis documents exist and subcontractor complies with its requirements
- Ensure all subcontractor procedures are understandable, current and comply with appropriate companywide manuals
- Ensure acceptability of equipment required to support safety basis documents
- Maintain knowledge of facility deficiencies and the status of action plans to resolve each deficiency
- Review lessons learned and ensure that similar conditions do not exist in the facility.

4.1.3.10 Planning and Controls Lead. The planning and controls lead is responsible to the project manager for providing planning and controls support. Specific responsibilities include:

- Developing project plans and budgets
- Tracking actual costs for the various control accounts and work packages
- Developing monthly reports, variance analysis, and variance corrective action plans

- Converting planning data into a baseline for cost and schedule
- Supporting the baseline change control process
- Supporting the trend program
- Developing weekly status summaries for cost and schedule performance for engineering, procurement, and construction.

4.1.3.11 Environmental Lead. The environmental lead reports directly to the project manager. Responsibilities include providing overall technical expertise with respect to regulatory issues, natural and cultural resources, and risk assessment for the ICDF Complex Project. Specific duties and responsibilities include, but are not limited to, the following:

- Identifying environmental and regulatory issues that affect operations and developing solutions in coordination with the project engineer and project task leads
- Defining implementation details of the project environmental requirements through development of an environmental checklist (as needed) and project applicable or relevant and appropriate requirements (ARARs) implementation documentation
- Reviewing the quality of project deliverables from an environmental regulatory standpoint
- Supporting project task leads by reviewing plans, procedures, and technical documents to ensure that all regulatory issues and requirements have been addressed
- Working with the project's task leads and management to develop appropriate mitigation measures when environmental issues are identified minimizing the potential for noncompliance with environmental requirements
- Assisting the project engineer and project task leads by providing regulatory and compliance oversight, direction, and acceptance of subcontracted environmental work
- Coordinating project status and environmental issues with environmental affairs home organization points of contact to ensure consensus and to obtain specific environmental discipline support as needed.

4.1.3.12 Rad-Con Management. The facility Rad-Con manager interfaces with the project manager. His/her specific duties and responsibilities include, but are not limited to, the following:

- Ensuring that radiological hazards are identified and appropriate controls are implemented to maintain worker exposure to those hazards as low as reasonably achievable (ALARA)
- Interfacing with the project health and safety representative
- Providing information regarding radiological resources for project planning
- Providing a management team for Rad-Con personnel.

4.1.3.13 Radiological Controls Engineer. The radiological controls engineer reports directly to the facility Rad-Con manager and to the project manager. He/she is responsible for providing radiological engineering support within the project. His/her specific duties and responsibilities include, but are not limited to, the following:

- Conducting ALARA reviews, exposure and release modeling, and shielding and radiological controls optimization for all work planning
- Serving as the project point of contact for design and operations issues related to ALARA and Rad-Con
- Ensuring that radiological hazards are identified and appropriate controls are implemented to maintain worker exposure to those hazards ALARA
- Interfacing with the project health and safety representative.

4.1.3.14 Radiological Control Technicians. The radiological control technicians report directly to the facility Rad-Con management (foreman or lead). They are responsible for ensuring compliance with the INEEL Radiological Control Program (Company Manual 15A) within the project. Their specific duties and responsibilities include, but are not limited to, the following:

- Completing all tasks assigned by the radiological management
- Assisting project personnel in complying with the INEEL Radiological Control Program, and project- or facility-specific radiological controls
- Acting as a radiological control information resource for field personnel
- Complying with procedures, instructions, and work permits for tasks assigned
- Immediately reporting any procedural conflicts, unplanned circumstances affecting the performance of assigned tasks, unsafe conditions, alarming equipment, or abnormal job site or work conditions to the radiological controls supervisor and project task lead
- Taking corrective action during emergencies, stopping work, or ordering an area evacuated when an imminent radiation hazard exists and such actions are necessary to ensure worker safety.

4.1.3.15 Safety And Health Representative. The duties of the safety and health representative include the following:

- Preparing site safety plans, hazards identification analysis, confined space permits, fall protection work plans, exposure assessments ergonomic evaluations, and other safety documents as required by federal regulation or company procedure
- Assisting project personnel in complying with applicable health and safety standards and related INEEL procedures
- Scheduling personnel exposure monitoring, as needed, providing direction to the industrial hygiene technician, and interpreting monitoring results

- Determining appropriate personal protective equipment needs for project personnel, visitors, and subcontractors
- Reviewing work packages for completeness of safety and health content, hazard identification, and appropriate mitigation efforts
- Interfacing with the radiological controls and quality engineer
- Supporting project management in investigating accidents and injuries and preparing written reports to project and functional management
- Acting as a source of health and safety information for project personnel and addressing related employee concerns
- Interfacing regularly with the project task leads on all project activities having health and safety implications
- Ensuring safety and health training is current
- Ensuring that project management is continually updated on the condition of all projects from a safety and health perspective
- Conducting on-site safety assessments
- Conducting safety and health assessments to verify implementation and compliance to applicable health and safety standards and related INEEL procedures.

4.1.4 Primary Project Interfaces

Successful accomplishment of the project will be dictated by the timely communication and effective cooperation of many parties. Some of these exist within the BBWI organization and are driven by the same influences as the project organization. However, some are external to BBWI and the INEEL. The project manager must effectively orchestrate the interfacing relationships of these interested or affected groups, which are highlighted in the following subsections.

4.1.4.1 ICDF Design and Construction Subcontractors. CH2M Hill and Montgomery Watson have teamed up to complete all design and construction necessary to complete the ICDF landfill, evaporation pond, leachate collection system, and other systems. The SSSTF will also employ a subcontractor to complete construction of the minimal treatment facilities.

4.1.4.2 BBWI Interfaces. The project requires support from various organizations within BBWI such as the INTEC facility, Waste Generator Services, and Applied Geosciences. The project manager obtains this support through task baseline agreements and interface agreements.

4.1.4.3 Regulatory Interfaces. The BBWI project manager defines the strategic approach, directs overall activities, and measures progress toward accomplishing project objectives. Day-to-day actions to achieve this end are accomplished through coordination and management by the project manager. The DOE FPM maintains contact with state and federal regulatory agencies and communicates with the BBWI project manager to ensure that all project work is carried out in accordance with applicable laws and agreements. The following are necessary interfaces with the regulatory agencies:

4.1.4.3.1 Idaho Department of Environmental Quality—The IDEQ provides critical stakeholder input to refine both near-term and long-term approaches to remediation projects as well as to provide final interpretation of state rules and regulations. Therefore, effective interface is necessary with this agency to realize successful project completion.

4.1.4.3.2 U.S. Environmental Protection Agency—The EPA also provides critical stakeholder input to refine both near-term and long-term approaches to remediation projects as well as to provide final interpretation of federal rules and regulations. Therefore, effective interface is required with this agency to realize successful project completion.

4.1.4.3.3 U.S. Department of Energy—The DOE provides overall project funding and programmatic direction relative to specific DOE rules and regulations. The DOE FPM has the ultimate authority to direct and change project technical, cost, and schedule baselines as it deems appropriate. The BBWI project manager must continually comply with these directions or changes; therefore, the BBWI project manager must maintain close and constant interface with the DOE to ensure realization of project baselines.

The FPM, through a working group that involves all parties, manages these interfaces. Telecommunications and meetings are routinely conducted. Through these discussions, regulatory interpretations are negotiated and managed. For inconclusive or conflicting opinions, a proactive approach is developed by the FPM and documented to establish regulatory decisions so that the project can progress on track.

4.1.4.4 Stakeholder Interfaces. Stakeholders can influence actions associated with the project. Examples of these stakeholders include but are not limited to:

- INEEL Citizens Advisory Board
- Indian Tribes
- Environmental and Special Interest Groups
- Citizens of the State of Idaho.

Both direct and general public interfaces with these groups are vital to the success of the project. These interfaces are outlined and carried out in accordance with the INEEL *Community Relations Plan* (INEL 1995). The vehicle for communicating project changes to these stakeholders is through public awareness meetings and press statements.

5. RESOURCE REQUIREMENTS

5.1 Staffing

Overall project staffing needs are developed based on the detailed Work Breakdown Structure (WBS) (see Appendix B) and associated scope. Figure 5-1 shows the overall relationship between WBS development, scheduling, work costing, and resource need development.

Resources necessary to complete the ICDF Complex activities consist primarily of dedicated project managers; project controls engineers; scientists; engineers; field workers; administrative support; procurement; document control; regulatory compliance; and environment, safety, health, and quality personnel. A number of additional individuals are routinely needed throughout the project but at a lower level of effort.

Once the work scope is defined and quantified, it is scheduled and costed. In parallel, a resource report is developed, showing how resource needs by corporate work discipline code distribute over time. This, in turn, is used to develop the project staffing plan, which is used to communicate the project's needs to the resource-providing home organizations and thus secure the necessary resources to perform project work.

As discussed in Section 11.3, Acquisition Strategy and Processes, BBWI has the resources needed to perform this work, with specialty assistance as noted in that section.

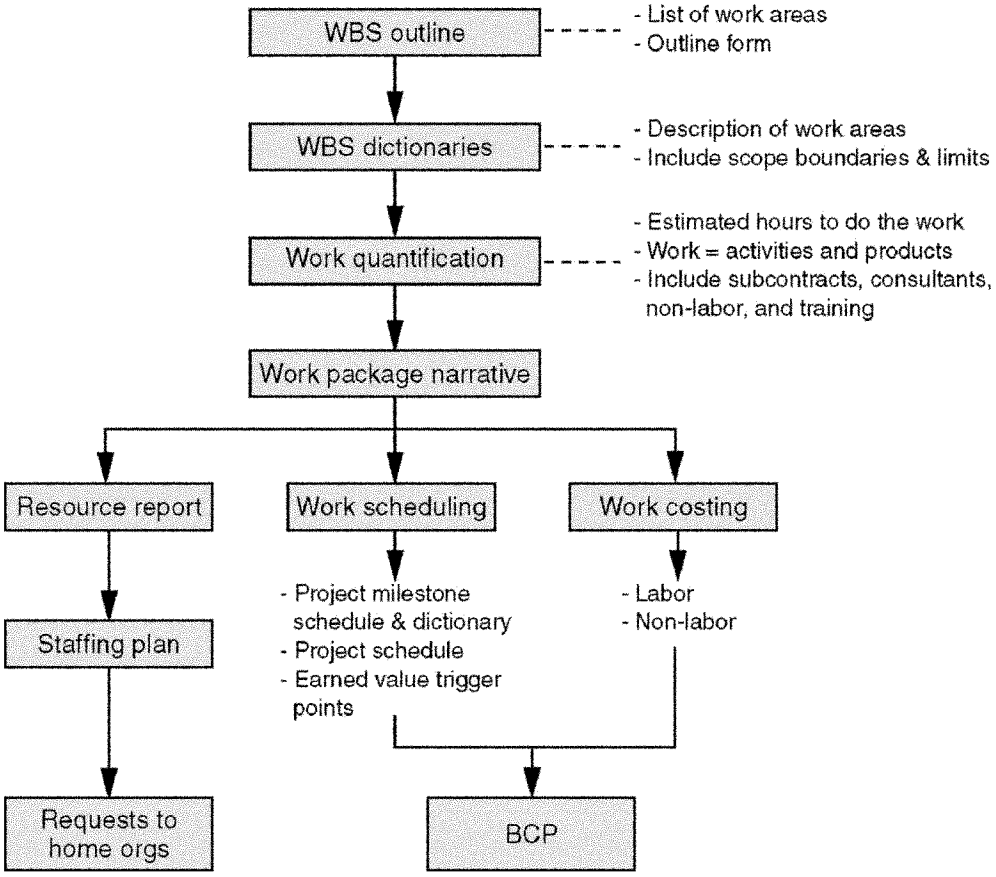

Figure 5-1. Work planning process.

5.2 Funding

Section 6.3, Cost Baseline, provides the project cost baseline. Total project costs, with distribution over the project duration are presented in that section and Appendix E. Funding amounts identified in the Cost Baseline are needed to complete the project on schedule. The funding requirements and funding profile are based on the project schedule for start of operations in August 2003 for the ICDF landfill Cell 1 and evaporation pond, SSSTF project schedule for start of operations is December 2003, and ICDF landfill Cell 2 start of operations is January 2006.

5.3 Equipment

No special equipment has been identified at this time to support the project design and construction efforts. During startup however, heavy equipment such as dozers, forklifts, roll-on/roll-off containers, and other miscellaneous vehicles will be required. In addition, the treatment equipment that will be installed in the decontamination facility will be procured under the SSSTF request for proposal (RFP). Other equipment that the ICDF Complex will need includes any security and computer systems needed for operations.

5.4 Support Services

Support services for the project will be provided from existing BBWI resources, and are included in the project staffing plan. All necessary laboratory analysis support is available from existing BBWI resources; however, off-Site laboratories will be considered as appropriate.

5.5 Construction and Engineering Subcontracts

A value engineering session was held among various BBWI organizations where it was determined that a "design/build" would be the optimal strategy for design and construction of the ICDF landfill and evaporation ponds. Although BBWI had the expertise to develop the conceptual design, the necessary expertise and proven success for the design process and construction of a mixed low-level waste disposal facility was not available. Based on this decision, a firm-fixed price contract was awarded to a responsive and responsible offeror providing the best value, including technical competence, and the most favorable pricing.

In combination with this "design/build" subcontract for design and construction of the ICDF landfill and evaporation ponds, another subcontract was established with an entity independent of both the design/build subcontractor and BBWI. This subcontract was established as a CQA subcontract, wherein the entity selected provided all CQA support, which included quality assurance/quality control, reviews, materials testing, and final certification and reporting.

Independent of the ICDF landfill and evaporation ponds subcontract, the SSSTF utilized the BBWI design organization to perform all design of the facility. However, it was determined that construction of the SSSTF would be performed by a construction subcontract. A more detailed explanation of the procurement and construction strategies involved can be found in Section 11 of this PEP and in the ICDF Complex acquisition plan (DOE-ID 2002f).

6. PROJECT BASELINES AND PLANNING AND CONTROLS

6.1 Technical Baseline

This section summarizes the technical requirements and identifies major project deliverables. The technical baseline consists of the project scope, the technical and functional requirements (T&FRs), the Work Breakdown Structure (WBS), and the planned project deliverables.

6.1.1 Scope Summary and Basis

The specific objectives of the project are defined in Section 2.1 of this PEP. The ICDF Complex Project scope includes the design, procurement, construction, testing, readiness assessment, acceptance for delivery, and operations, closure, and long-term monitoring/maintenance of the ICDF Complex facilities. These ICDF Complex facilities are generally to provide for the centralized INEEL facility that will be responsible for the receipt, storage, treatment (as necessary), and disposal of INEEL CERCLA remediation (remedial and removal actions) waste.

The T&FR documents established the technical baselines for the project and contain project requirements. It contains requirements for the design, construction, operations, closure, and long-term monitoring of the ICDF Complex facilities. These requirements are based on the project objectives. The T&FR documents contain project requirements, but they do not contain detailed design criteria. The detailed design criteria are presented in the RD/CWP documents for the ICDF Complex components.

The project team produced the T&FR documents (TFR-17 and TFR-71) in accordance with Management Control Procedure (MCP)-9185, "Technical and Functional Requirement." The T&FR document identifies, documents, and controls the technical and functional requirements, including the technical basis and associated performance requirements to execute the design process. The project engineer is responsible for the T&FR document content and approval. The project team updates the T&FR document as needed, according to applicable project requirements and procedures.

6.1.2 Work Breakdown Structure

The objective of the WBS is to subdivide the total project into manageable units of work for effective planning and control. In the WBS, work is subdivided into successive lower levels of detail. Each successive level consists of elements that identify the different areas and functional requirements of the project. Each lower level is a meaningful subdivision of a higher element. All project team members contributed to develop the WBS. They identified the correct layout and breakdown of the project into several levels of detail. Appendix B provides the WBS for the ICDF Complex Project represented to the fifth level of detail.

6.1.3 Document Deliverable List

The project team deliverables meet extensive documentation requirements as specified by CERCLA. A project document deliverables list (see Appendix C) has been developed utilizing the project scope as defined in the OU 3-13 RD/RA SOW (DOE-ID 2000a). Listed documents are prepared and controlled according to requirements in the FFA/CO. Project document deliverable topical areas include:

- Remedial Design
- Remedial Action Work Plan

- Operations and Maintenance Plan
- Pre-Final Inspection Checklist
- 100% Design Package
- Pre-Final Inspection
- Startup Assessment Report
- Remedial Action Report
- Operations and Maintenance Report.

6.2 Scheduling

The project team develops and maintains a detailed schedule. They develop and maintain the schedule according to the following documents:

- Detailed Work Plan System Guidance
- Detailed Work Plan Process Guidance
- Planning and Controls Desktop Reference.

Figure 6-1 illustrates the process the team follows to develop and implement the project schedule. The following subsections describe the process.

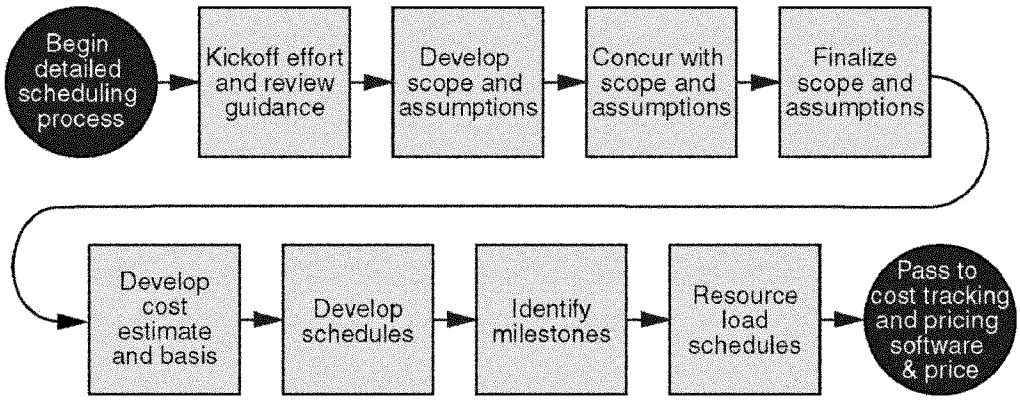

Figure 6-1. Scheduling process.

6.2.1 Detailed Scheduling Process

First, all project team members discuss the basic scope and assumptions before developing detailed schedules and cost estimates. The project manager holds discussions with team members to define scope and preliminary budget targets. The project manager is responsible for organizing the project team and establishing each member's role and responsibility.

Next, DOE-ID provides general scope and funding targets through the Project Execution Guidance or other formal document. For Environmental Management projects such as the ICDF Complex Project, funding targets are based on the President's budget and the "EM Program Integrated Priority List."

Third, the project team reviews and understands the "Detailed Work Plan Process Guidance" provided to them. They develop a plan to achieve the project key deliverables. They must understand the company charging practices.

Fourth, the project team documents preliminary scoping statements in a work package form. These scoping statements and assumptions are the starting point for producing detailed schedules and cost estimates.

Fifth, the project team members concur on the fiscal year scope and assumptions. They use the scope and assumptions later to produce detailed plans.

Sixth, the project team develops detailed scope to ensure requirements and assumptions are clearly identified and quantified. They develop and retain backup documentation supporting the detailed assumptions, cost estimates, prerequisites, and resource requirements.

Finally, the project team develops the cost estimate and basis from the previously identified scope and assumptions.

6.2.2 Develop Schedules

Following development of cost estimate and basis, the project team develops the schedule to execute the work scope. The project team is responsible for defining the activities and schedule logic to complete the work scope. The project team develops a schedule using Primavera Project Planner (P3) software for discussion and reaching agreement on the changes with the DOE-ID FPM and other relevant project team members. The P3 schedule is also used for the schedule baseline contained in this PEP. The team then uses the corporate scheduling software to complete the initial time phasing for this scope of work and the latest approved shells covered in the "Detailed Work Plan Systems Guidance." This assists them in determining compliance milestones, key interface dates, and deliverable due dates throughout the fiscal year. The planning and controls engineer also uses the "Detailed Work Plan Process Guidance" and the "Planning and Controls Desktop Reference" during the scheduling process. Developing the schedule is an iterative process. The project team uses early versions of the schedule to identify assumptions, prerequisites, and schedule conflicts. The final schedule is detailed enough to track progress monthly without being overly complicated and nonfunctional.

In addition, development of the schedule includes the entire project scope necessary to implement the design, construction, startup, operations, closure, and long-term monitoring. There may be several tasks that are not funded, based on other priorities at the INEEL. However, these tasks will still be presented in the schedule, as the schedule presents the entire project scope. If necessary, these tasks will be flagged as unfounded in the schedule and tracked using the variance process, discusses in Section 6.6.

6.2.3 Identify Milestones

The project team includes the following milestones in the schedule:

- DOE-directed milestones
- Regulatory milestones from the FFA/CO or other CERCLA documents

- Critical Decisions (CDs)

- Internal intermediate milestones.

They use these milestones to identify key milestones and complete critical activities. These milestones are included as individual line items within the schedule.

6.2.4 Resource Load Schedules and Pass to Cost and Pricing Tool

Once the milestones are identified, the project team identifies resources by activity required to accomplish the defined work scope. The planning and controls engineer assigns resource data based on the project team input to the scheduling software to schedule activities and generate reports. Finally, the planning and controls engineer loads schedule data from scheduling software into the cost tracking and pricing tool according to the "Detailed Work Plan Systems Guidance." The planning and controls engineer generates various cost and resource reports from the pricing software for the project team to review. Project teams use these reports to analyze resource availability and budget.

6.2.5 Project Schedule

Figure 6-2 presents the summary level life-cycle schedule for the ICDF Complex, through operations of the SSSTF. The project schedule for the ICDF Complex consists of six primary phases:

- ***Design***—The ICDF landfill and evaporation ponds were designed by a company experienced in designing waste disposal facilities. The SSSTF was designed by the BBWI engineering and design organizations.

- ***Construction***—Construction for both the ICDF landfill and evaporation ponds and the SSSTF will be completed by contractors with BBWI oversight.

- ***Startup***—Startup will be performed by BBWI and will follow all company standards and procedures for proper startup of a new facility including a management assessment, inspection checklists, system operability (SO) testing, etc.

- ***Operations***—Operations will be subcontracted by BBWI and will include excavation and transportation of waste from the various WAGs. Operations will entail the dig site excavation, transportation, staging and storing, disposal, and all other activities necessary for a disposal facility.

- ***Closure***—(2013-2015) Closure will include the placement of the final cap over the landfill as well as deactivation, decontamination, and dismantlement (D&D&D) activities.

- ***Long-term monitoring and maintenance***—(post 2015) This will include all sampling and monitoring activities for a given amount of time to ensure that all requirements that are protective of human health and the environment are met.

The detailed schedule for the ICDF Complex Project from January 2002 through startup of ICDF Cell 2 is presented in Appendix D (ICDF Complex Project Detailed Schedule). The detailed schedule for the ICDF Complex Project has been prepared based on the above strategy, with consideration given to fiscal-funding limitations, weather, and the construction season (time of year).

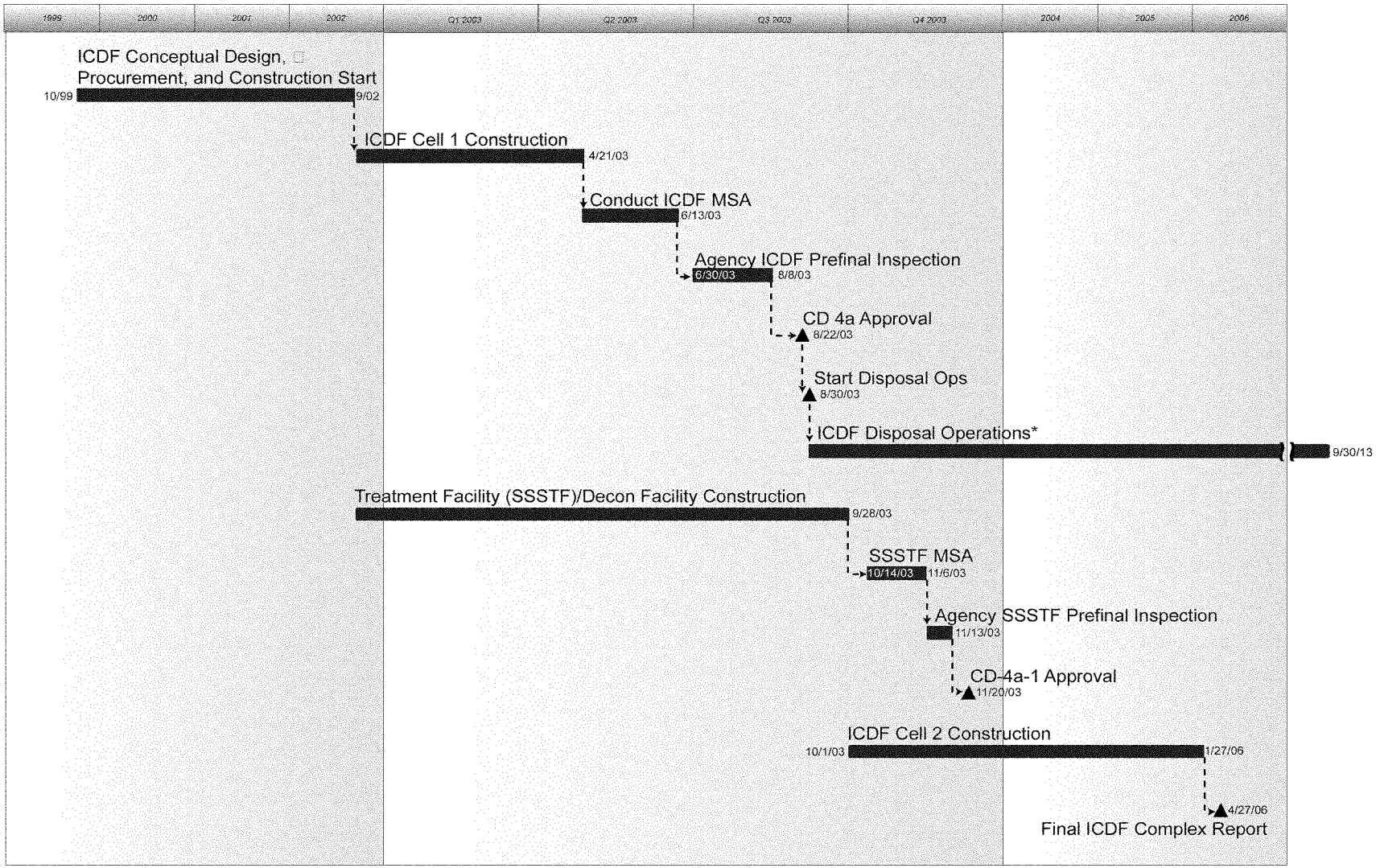

Figure 6-2. ICDF/SSSTF Summary Schedule

Figure 6-2. Life-cycle schedule ICDF Complex showing the various phases of the project, including design, construction, startup, operations, closure, and long-term monitoring.

6.3 Cost Baseline

6.3.1 Total Project Cost

During the development of the Title II designs, the project team developed a baseline cost estimate range. Based on the project WBS each level was estimated to arrive at a total project cost. The project team used (a) an estimating program to develop and format the estimate to a level of detail consistent with the preliminary baseline information; (b) a combination of several estimating techniques, as outlined in the *INEEL Environmental Restoration Cost Estimating/Cost Engineering Guide* (DOE-ID 2000h), to meet the estimating requirements of DOE Order 413.3, "Program and Project Management for the Acquisition of Capital Assets"; and (c) published construction estimating databases, vendors and material suppliers, subject matter experts, and Site-specific historical information to determine pricing and productivity rates for estimate detail items. In addition, the validity of the estimated costs for project management, Site support, project design, procurement, construction management, construction, and start up and testing was evaluated during department and project team reviews of the estimate. Attached to the estimate is a recapitulation of the estimating scope, basis, assumptions, and contingency analysis methodology used in creating the estimate. Cost estimating assumptions are presented in Appendix A. Also, cost escalation factors to the estimate levels were applied according to the *INEEL Cost Estimating Guide*, consistent with the baseline project schedule. The project baseline cost estimate is $46.85 million at the 85% confidence level.

6.3.2 Funding Profiles

The funding profiles necessary for the ICDF Complex Project at the 85% confidence level is shown below in Table 6-1. The funding profile based on the WBS is presented in Appendix E (ICDF Complex Project Cost Estimate).

Table 6-1. Funding profile for the ICDF Complex Project.

Fiscal Year	Activities	Funding Level ($ Millions)
2000	Project planning and design activities	$1.92
2001	Project design activities and ICDF excavation/test pad construction/testing	$8.45
2002	Balance of project design activities and ICDF Complex construction activities (complete ICDF landfill cell 1 and SSSTF construction)	$16.80
2003	Balance of ICDF Complex construction and startup of SSSTF, ICDF landfill cell 1, and evaporation pond	$12.60
2004	Start of ICDF landfill cell 2 construction	$3.53
2005	ICDF landfill cell 2 construction	$2.10
2006	Balance of ICDF landfill cell 2 construction and cell 2 startup	$1.40
Total		$46.80

6.3.3 Cost Contingency

Contingency was included in the cost estimating process to cover cost/schedule risks for the ICDF Phase II landfill Cell 1/evaporation pond Construction, ICDF landfill Cell 2 Construction, the SSSTF

Construction, and the ICDF Complex Startup. Potential risks to the project were identified and evaluated for activities at the third, fourth, or fifth level of the WBS. Through a consensus process, an upper and lower bound was determined as a percent change from the original estimated cost. This data was input into the commercial software package to calculate and apply the appropriate contingency to the estimate elements using a Monte Carlo simulation technique and triangular distribution. The overall project risk assessment and management process described in Section 9 is included for input and consideration in the project contingency analysis. The Risk Management Plan for the ICDF Complex (PLN-275) details this cost contingency analysis.

6.4 Baseline Change Control

Approval of this PEP establishes the technical, schedule, and cost baselines for the ICDF Complex Project. Changes to the ICDF Complex Project baseline must be controlled by a formal and documented control management process. Project baseline changes will experience the need to have various levels of approval authority. Shown in Table 6-2 are the various changes to the ICDF Complex Project baselines that have been considered along with the applicable level of approval authority.

Table 6-2. ICDF Complex Project baseline change control thresholds for the different levels in changes of the technical scope, schedule, and/or cost.

	Level 1	Level 2	Level 3	Level 4
Approving Authority	Acquisition Executive	Principle Deputy to AM EM with concurrence of ER Program Manager	Federal Project Manager	Contractor Project Manager
Technical	Changes to scope that affect the mission need requirements	Changes to scope that may impact operation functions, but does not affect mission need.	Changes to the technical baseline or design and operational approaches	Field (design, construction, operation, etc.) changes that no not change the technical baseline
Schedule	Any change in the ICDF Complex Project schedule of greater than six months or any change in a critical decision milestone of more than one month	Any change in the ICDF Complex Project schedule of greater than three months or any change in a critical decision milestone	Any change in the ICDF Complex Project schedule of greater than one month	Any change in the ICDF Complex Project schedule of less than two weeks or changes at the subproject level activities or less than one month
Cost	Any increase in the ICDF Complex Project baseline at the 85% confidence level	Any increase in the ICDF Complex Project baseline at the 65% confidence level	Not Applicable	Management of costs within the 65% confidence level for the major subproject activities

Trends provide an early warning control tool that precedes formal changes. As discussed in Section 6.2.2, the changes for the schedule are first presented in a P3 schedule to reach consensus on the changes between BBWI and DOE-ID. Along with the development of the changes in the scope and costs, the project team focuses on scope definition and pertinent assumptions, which are included in the formal documentation package for the change control process. The project balances between scope definition that is too fine to allow flexibility in the work and definition that is too broad to control the scope and prevent scope creep. Project management and planning and controls maintain this balance by ensuring that the appropriate scope definition is included in each baseline change proposal (BCP).

As changes to the baseline can have long ranging impacts, the BCP strategy for the ICDF Complex Project is focused on the lifecycle baseline. Therefore, impacts and changes on outyear scope, schedule, and cost information are considered in the development of changes that occur in either the current fiscal year or outyears, as applicable. Updating of the Detailed Work Plans (DWPs) is focused on the current fiscal year, but the impacts on the lifecycle baseline is considered and presented at a summary level in the change control package. The project team coordinates baseline changes with SADs and functional managers to endure necessary resources are available to perform the work.

6.5 Work Authorization

The project team has an effective work authorization process. They follow MCP-22, "Work Authorization." The project team only performs work authorized in an approved DWP or BCP. In addition, the project team controls charge numbers to ensure authorized performers perform authorized work. To further ensure accurate charging practices, the individual performers receive instructions when they receive charge numbers.

6.6 Performance Monitoring

6.6.1 Schedule Performance

The project measures schedule performance on actual physical work accomplishments. It measures non-contract performance on percent complete as determined by the work package manager and project team with identifiable trigger points. Trigger points have an associated performance value. They may also be based on milestone completion, engineering standards, or equivalent units. True level-of-effort tasks are based on a calculation of productive hours for the period as identified in the appropriate fiscal year accounting calendar. The project team determines contract earned value as follows:

- By measured number of units in place
- By material on-Site in storage
- Upon receipt
- By surveillance by authorized BBWI representative
- Upon performance payment as contracted by procurement.

6.6.2 Cost Performance

The project effectively tracks cost performance. Planning and Controls prepares reports documenting cost actuals for project management. The report includes:

- Weekly actuals (dollars and hours)
- Month cumulative actuals (dollars and hours)
- Year-to-date actuals (dollars and hours)
- Authorized funding
- Various ad-hoc reports.

6.6.3 Variance Analysis

The project performs variance analysis monthly for year-to-date performance. This analysis includes the identification of cause, potential impacts, and corrective actions. The project also analyzes resource usage variances to identify resource shortages and to determine if functional management must be notified of needs shortages or overages.

6.6.4 Estimates at Completion

The project team develops monthly estimates at completion (EACs). They monitor identified trends and use them to develop the EACs. These EACs focus not only on the current fiscal year, but the entire lifecycle baseline for the ICDF Complex Project. Planning and controls reports the EACs as early as practicable in the fiscal year.

6.6.5 Thresholds

The project team identifies EM thresholds according to Appendix A of MCP-3822, "Performance Measurement, Analysis, Estimates at Completion, and Reporting." They identify trend thresholds according to MCP-3805, "Trend Identification, Monitoring, and Analysis Program." In addition, the project team has established thresholds at 65% and 85% confidence levels for the major project activities. If either level is exceeded, the results will be reported and presented to the appropriate level of authority.

6.6.6 Reporting

The project team meets DOE-ID and BBWI reporting requirements. The reporting requirements are rolled into a monthly report, which is delivered to DOE-ID. During monthly WAG 3 program reviews, the project team provides detailed project reports to:

- DOE-ID project management
- DOE-ID funds management
- BIC management.

The reports include the following information:

- Significant accomplishments
- Cost performance (earned value) at this PEP WBS level 3
- Schedule performance (earned value) at this PEP WBS level 3

- EAC information at this PEP WBS level 3
- Milestone, Program Execution Guide/Program Evaluation Management Plan, and PBS status
- Cost and schedule analyses, including discussion of variance causation, impacts, and corrective actions
- 30-60-90 day look ahead to significant activities
- Baseline change history
- Trend register and history
- Milestone schedule
- Issues identification and discussion
- Resource projections.

During the initial construction activities, a weekly report was prepared and distributed among BBWI, DOE-ID, DOE-HQ, EPA and IDEQ. This was an effective method of reporting progress among the project personnel and agencies. This reporting mechanism will continue to be used in the upcoming construction activities along with future project activities.

The project team is involved in the development of the quarter project review (QPR) presentation on the ICDF Complex Project that is presented to the acquisition executive quarterly. The reporting for both cost and schedule in the QPR will be at this PEP WBS level 2. Also, the project team will be involved in the development of baseline change control presentations when the change control is considered to be a Level 1 or Level 2 change as presented in Table 6-2.

If requested, the schedule and cost performance can be evaluated at Levels 4 and 5 of the project WBS. This is not considered standard reporting to management, but may be utilized to determine progress on specific construction or other activities as necessary.

6.7 Communications

The project effectively processes and controls communications. The team follows established processes for formatting and preparing external and internal correspondence at the INEEL. The team also tracks, retrieves and stores project correspondence that affects the ICDF Complex Project from a scope, cost, or schedule aspect in compliance with the INEEL-wide correspondence control procedure.

7. DOCUMENT AND RECORDS MANAGEMENT

The ICDF Complex Project implements effective document and records management processes, which are specified in the INEEL Document and Records Management program (refer to MCP-135 and MCP-557). As applicable, project records are also processed and managed in accordance with the FFA/CO. This ensures that project records are created as specified and managed to protect them from loss, damage, destruction, or unauthorized access and/or removal. Additionally, project records are created and managed as quality records, which require that they be complete, legible, corrected in accordance with quality assurance requirements, validated, verified, and accessible.

7.1 Process

The project effectively processes records as specified in Company and project-specific documents.

The records coordinator processes all project records. This ensures that records are processed methodically and uniformly. The records coordinator also verifies that all records are complete before they are submitted to document control, Administrative Record and Information Repository determination, and the Electronic Document Management/Optical Imaging System (EDM/OIS). In addition, the records coordinator verifies required retention periods and ensures records are available to inspections, reviews, and other requests as necessary.

All project records are retained according to requirements. They are assigned retention periods as specified in the DOE Administrative and Environmental Records Schedules. Figure 7-1 illustrates the project records management process.

The Document Management Control System processes all revision-controlled documents. MCP-135, "Creating, Modifying, and Canceling Procedures and Other DMCS Controlled Documents," describes the document control process. This process provides a consistent approach to planning, developing, reviewing, changing, approving, and controlling project documents.

All project records are readily accessible. The project's record copies are stored electronically in the EDM/OIS. This system implements the requirements of the FFA/CO and MCP-557 and provides a long-term stewardship baseline. In addition, as a convenience to project personnel, a copy of project records/documents and reference materials are maintained in the project files during the life of the project for quick retrieval.

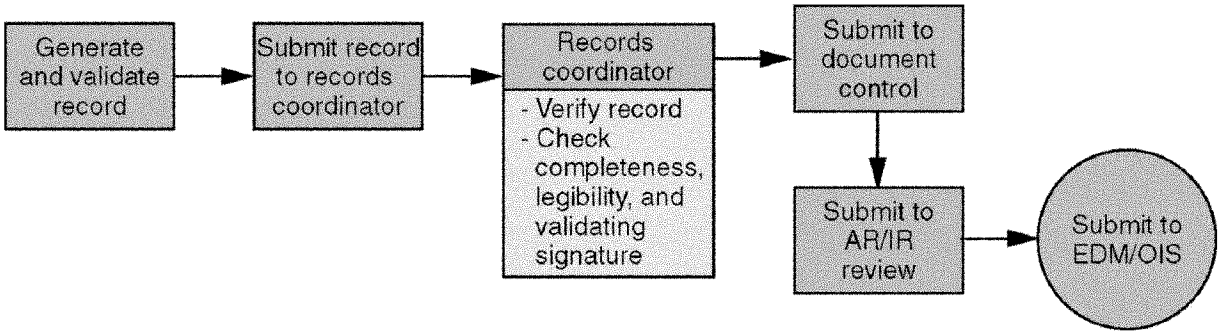

Figure 7-1. Records management process for the ICDF Complex Project.

7.2 Records Management Resources

Project personnel have several records management resources, including records management documents, records management and document control professionals, and a records management Web site. These resources ensure past records management concerns are addressed and resolved. Project personnel and records personnel use the following reviewed and approved records management implementing documents, which are readily accessible on the Intranet.

- MCP-557, "Managing Records," describes how project personnel manage records
- MCP-3573, "Vendor Data," describes how project personnel process vendor documents
- LST-9, "Uniform Filing Codes," lists the Uniform File Codes project personnel apply to the project's record types
- MCP-204, "Administrative Record and Information Repository Procedure for Environmental Restoration," describes how to determine Administrative Record and Information Repository and lists FFA/CO record types that must be accessible to the public.

Records management personnel (known as records coordinators) and document control professionals provide direct support to the project. Their responsibilities include the following:

- Verify, process, and manage project records and controlled documents
- Provide records management guidance to project personnel
- Provide quantitative data on the processing of records and controlled documents
- Process and publish current approved documents.

8. CONFIGURATION MANAGEMENT

The INEEL has a process in place to maintain configuration management of the project. The project performs configuration management activities for the safety-significant and commercial grade structures, systems, and components (SSCs), and associated technical baseline documents, within the project scope to ensure that changes are communicated to affected project personnel, and updated on drawings and documents.

Configuration management is an integrated management process that establishes and maintains consistency among design requirements, technical baseline documentation, and the physical configuration of selected SSCs of the project. Maintaining this consistency among design requirements, technical baseline documentation, and physical configuration ensures safety and efficiency.

The configuration verification process shall ensure that the technical baselines satisfy design requirements, that the physical characteristics of the approved changes are properly incorporated into the technical baselines, and that the entire configuration management process functions in accordance with the approved plan (PLN), PLN-956, "Configuration Management Plan for the Environmental Restoration Program."

9. RISK ASSESSMENT AND MANAGEMENT

The project team follows proven, effective processes to assess and manage risk. The team identifies, analyzes, and manages risk while planning the project and continuing risk management throughout succeeding project phases. Thus, the team improves the success of the project. Risk is the degree of exposure to an event that might happen to the detriment or benefit of a program project or activity. Risk management is a structured process to handle the potential impact risk has on a project.

The overall guidance for change control to the project cost, schedule, and technical baseline is provided in MCP-9106, "Management of INEEL Projects," and PLN-694, "Project Management Plan for Environmental Restoration Program Management," which references MCP-3416, "Baseline Change Control." Changes to the requirements baseline require the same level of approval as this PEP. Changes that do not affect the requirements baseline require only the project manager's approval. Changes to work orders shall be processed per INEEL company standards for work orders.

This project will be managed as a "configuration-managed change" project per MCP-2811, "Design Control," and under the direction of MCP-9106 to document changes. Significant design/scope changes require the Engineering Change Form (ECF), INEEL Form 431.37, to be revised prior to implementation. The review and approval of all significant technical changes shall be documented on Form 431.51 or on the ECF. All other technical changes are considered minor changes and are implemented by the STR with input from the architect-engineer (A-E), project manager, quality engineer, and ES&H as required by the nature of the change. These changes shall be identified on Form 540.16, "Interface Document," and identified as a construction interface document or a supplier interface document.

9.1 Risk Management Plan

The project team developed a risk management plan to efficiently focus on areas of concern and make better-informed decisions. The risk management plan for the ICDF Complex Project is document PLN-275, "Risk Management Plan for the ICDF Complex Project." The Risk Management Plan includes the discussion, in Section 3, of the six key risk management process elements . Additional information on risk assessment guidance can be found in the risk assessment guidance from DOE program and project management practices (DOE Practices 413.3, Section 8), as well as BBWI Guide (GDE)-70, Section N, "Project Risk Management." The ICDF Complex Project risk management plan addresses all identified risks for the project.

As discussed in the Risk Management Plan, there are eight risk issues that were identified as either moderate or high risk through the qualitative risk analysis. These risk issues are presented in Table 9-1. For additional information on the qualitative risk analysis see Appendix A in the Risk Management Plan (PLN-275). Risk handling strategies were developed for the moderate and high-risk issues identified in the Risk Management Plan. No risk handling strategies were developed for the low risk items, as the risk associated with these issues was not expected to significantly increase the cost or schedule for the ICDF Complex Project. The risk handling strategies for the moderate and high risk items are presented in Table 9-2.

Table 9-1. Moderate and High-Risk items identified in the qualitative risk analysis for the ICDF Complex Project.

Risk Issue	Probability	Consequence	Risk Level
Political visibility (DOE, local government, Congress)	Likely	Marginal	Moderate
Undefined, incomplete, or unclear functional requirements	Unlikely	Significant	Moderate
Undefined, incomplete, or unclear design criteria	Unlikely	Significant	Moderate
Specialty resources required	Likely	Significant	High
Modification TPC greater than $4M	Very Likely	Significant	High
Project schedule uncertainties or restraints that may impact project completion or milestone dates	Unlikely	Significant	Moderate
Annual funding limitations	Very Likely	Critical	High
Bidder's solvency	Unlikely	Critical	Moderate

Table 9-2. Risk handling strategy for the moderate and high items for the ICDF Complex Project.

Risk Issue	Risk Level	Unmitigated Cost	Handling Strategy	Cost to Implement	Residual Risk Level
ICDF Complex Startup					
Remedial Action Work Plan	Moderate	$825,207	Mitigate	825K	Low
O&M Requirements	Moderate	$49,941	Mitigate	50K	Low
O&M Manual	Moderate	$1,049,919	Mitigate	1,050K	Low
Startup	Moderate	$199,763	Mitigate	100K	Low
PHASE II Construction					
Mix ICDF Secondary Clay	Moderate	$152,770	Mitigate	61K	Low
Place ICDF Secondary Clay	Moderate	$357,326	Mitigate	143K	Low
Place ICDF HDPE	Moderate	$271,559	Mitigate	109K	Low
Place ICDF Primary GCL	Moderate	$570,883	Mitigate	228K	Low
Place ICDF HDPE	Moderate	$271,559	Mitigate	109K	Low
Place Evap Pond HDPE	Moderate	$103,139	Mitigate	41K	Low
Place Evap Pond GCL	Moderate	$215,849	Mitigate	86K	Low
Place Evap Pond HDPE	Moderate	$103,139	Mitigate	41K	Low
Place Evap Pond Sac HDPE	Moderate	$103,139	Mitigate	41K	Low
ICDF Cell 2 Construction					
Mix ICDF Secondary Clay	Moderate	$152,770	Mitigate	61K	Low
Place ICDF Secondary Clay	Moderate	$357,326	Mitigate	143K	Low
Place ICDF Secondary HDPE	Moderate	$271,559	Mitigate	109K	Low
Place ICDF Primary GCL	Moderate	$570,883	Mitigate	228K	Low
Place ICDF Primary HDPE	Moderate	$271,559	Mitigate	109K	Low

10. QUALITY ASSURANCE

10.1 Quality Assurance Requirements

This section addresses quality assurance (QA) processes critical to the ICDF Complex Project. Specifically, the section addresses how quality will be ensured during the following project phases:

- Design
- Construction
- Operations
- Closure
- Long-term stewardship.

This section cites guidance documents and requirements that establish the quality baseline. These documents include 10 CFR 830, Subpart A, "Quality Assurance Requirements" (Price Anderson Amendments Act), DOE-ID O 414.A, "Quality Assurance," and Appendix A of PLN-694, "Environmental Restoration Program Management." These guidance documents list requirements that must be met to satisfy our customers and stakeholders, DOE-ID, the State of Idaho, and the EPA. This project is classified as a low hazard radiological facility. The design, construction, operation, closure, and long-term stewardship of the ICDF Complex Project is done in accordance with applicable laws and regulations so that the overall project is successful and accomplishes what was planned.

10.2 Quality Assurance Program Implementation

The Quality Program applicable to the project will be the same highly effective program currently used by other projects, construction management, and the INEEL. The project has developed a project-specific quality program plan, which is the Quality Program Plan for the ICDF Complex, PLN-873. This plan contains the overarching quality assurance requirement from which the specific inspection plans will be developed.

INEEL requires that inspection plans contain sufficient information for the inspection to be performed without the inspector having to make judgment calls. In addition, construction interface documents and other planning and construction documents are revised and approved by the proper office. The different phases of the ICDF Complex Project may call for different levels of quality based on the level of risk to people and the environment. This section defines the applicable levels of QA, and the process for determining these levels. In particular, this section discusses the "nine-block" process presented in Appendix D of MCP-9106, "Management of INEEL Projects." Details regarding the Construction Quality Program are provided in Section 11.5.4.

10.2.1 "Nine-Block" Matrix

The "Nine-Block" matrix is a reference tool that allows the project team to evaluate and apply the appropriate quality levels for construction execution, based on evaluation of construction and operations interface risk. It is flexible by design. The ICDF Complex Project was initiated prior to development of this process. Therefore, although the project is not required to follow this process, it has followed the principles outlined to reduce the construction risk associated with the project. The project team uses the

Operations Interface Factors Table (see Appendix D of MCP-9106) to select an interface level and the Construction Safety Risk Factors Table to select a risk level; these determine which attributes are most appropriate for the planned construction scope. The team then goes to the Commercial Practices Graded Application Matrix (the nine-block matrix) and select the appropriate block. The results of this evaluation are provided in Section 11.5.4.

11. PROJECT WORK STRATEGIES AND PROCESSES

The ICDF Complex Project uses a coordinated project work strategy and process management approach. Existing administrative protocols and infrastructure are used wherever possible. This section describes the project work strategies and processes.

11.1 Project Management Strategy and Processes

The project management strategy ensures the successful completion of the ICDF Complex Project. It ensures that the project is conducted safely, efficiently, and cost-effectively. This project complies with the requirements of Project Requirements Document (PRD)-4, "INEEL Project Management System Requirements." The project team is implementing these requirements through a graded application of the criteria in the following company plans, procedures, and guidelines:

- MCP-9106, "Management of INEEL Projects"
- GDE-70, "General Project Management Methods"
- GDE-51, "Construction Project Management Guide, for Construction Projects"
- PLN-694, "Environmental Restoration Project Management Plan, for Environmental Restoration (ER) and Decontamination and Decommissioning (D&D) Projects"
- PRD-6, "Environmental Restoration Project Management."

The project team has and will continue to implement the project over four distinct phases: Pre-conceptual Planning, Conceptual Design, Project Execution, and Acceptance/Closeout. The following paragraphs describe the project management activities identified for each of the phases.

11.1.1 Preconceptual Planning Phase

Preconceptual planning identifies the need, justification, and priority for a project, and the initial effort to define the objectives and scope.

11.1.2 Conceptual Design Phase

Conceptual design consists of all the planning activities necessary to develop the project performance baseline (technical, budget, and schedule) and the execution strategy.

The conceptual design phase allows the project team to:

- Identify appropriate resources
- Develop roles, responsibilities, authorities, and accountabilities for each team member
- Define and implement project protocol/communication methods
- Develop and document the project scope and objectives
- Establish a project file and document control system per MCP-557

- Define a project file code index per GDE-51
- Perform an environmental evaluation per GDE-70, MCP-3480, and MCP-3690
- Initiate a Request for Determination of Safety Analysis Requirements per GDE-70 and Form 431.12
- Initiate a Davis-Bacon review per MCP-2874
- Determine security and safeguards requirements for the project
- Determine quality assurance requirements per MCP-540, PLN-694, and PLN-920
- Identify required project plans and their schedule for completion
- Identify and evaluate project implementation alternatives
- Perform a field/site investigation
- Develop project technical and functional requirements per MCP-9185
- Develop a project risk management strategy per DOE Order 413.3, Practice 8
- Identify appropriate commercial construction practices per PLN-920
- Develop a project acquisition strategy for engineering, products, and services
- Develop a configuration management strategy for structures, systems, and components
- Develop a DWP for follow-on project phases
- Define project scope, budget, and schedule baselines per GDE-70 and MCP-2871
- Develop a project review strategy per MCP-9217
- Develop planning and controls per GDE-70, MCP-3416, and MCP-3805.

11.1.3 Project Execution Phase

Project execution implements the project planning effort and manages the work to produce the desired products. The following activities take place during project execution.

The project manager:

- Ensures project funding has been received and the project is authorized to proceed
- Establishes the project location and mobilizes the project team
- Provides orientation on roles and responsibilities, and on PEP requirements

- Implements project protocol/communication, control and reporting system, trending and change control, documentation control, and other requirements contained in the approved PEP.

The project team:

- Executes project work including design engineering, procurement, and field activities
- Determines the extent of inspection required for shop or field activities based on the project quality requirements; prepares inspection plans and performs required quality verification activities
- Identifies and manages vendor data in accordance with MCP-3573, "Vendor Data"
- Performs design verification and/or functional reviews of technical activities (design, specifications, technical reports, etc.) as required by the approved PEP
- Determines readiness to perform field work or procurement; as a minimum, develops a checklist, updates the project risk plan, and documents reviews by the project team
- Conducts procurement, installation, and other shop or field activities in accordance with approved technical documents, the PEP, and the applicable company requirements
- Evaluates each change to the approved baseline for its affect on execution strategy, cost, schedule, and technical requirements
- Uses the construction management process to identify and resolve field problems and to change/clarify subcontractor requirements per GDE-51
- Maintains a current record of actual as-built conditions on the red-line record copy of the project's drawings, specifications, and other contract documents
- Develops a final plan for acceptance testing and turnover of the project deliverables by updating the PEP or preparing a detailed turnover and acceptance plan; coordinates the performance of this step in accordance with the requirements in MCP-2869, "Construction Project Turnover and Acceptance"
- Finalizes operations planning
- Supports the DOE-ID project manager in conducting periodic reviews with the Acquisition Executive
- Performs technical analysis and prepares corrective action plans as necessary for significant variances to the project technical baseline as a result of design reviews, testing, and/or simulations; reports results to the DOE-ID project manager
- Performs design engineering
- Maintains the project technical scope, schedule, and cost based on the results of the preliminary design; and establishes these as the project Performance Baseline
- Where long-lead procurement is required, ensures that the Acquisition Plan allows a phased authorization process

- Supports the DOE-ID project manager in the conduct of an external independent review, as necessary

- Updates the PEP, scope of work, cost estimates, and schedules, and document the updates through the change control process

- Uses the PDRI process to evaluate the project's readiness to proceed to construction.

11.1.4 Acceptance/Closeout Phase

Acceptance/closeout demonstrates successful completion, formal transfer of ownership, and completion of project closeout activities. The following activities take place during the acceptance/closeout project phase.

The project team:

- Conducts acceptance activities per GDE-70, which provides guidance on acceptance and turnover execution

- Performs the necessary acceptance activities (e.g., testing, sampling, analysis, inspections, walkthroughs, demonstration, readiness reviews) in accordance with the approved acceptance and turnover plan

- Ensures all closeout activities and document updates are complete in accordance with MCP-2811, "Design Control"

- Maintains the open deficiencies/issues tracking system. Documents resolutions and corrective actions

- Obtains quality verification of project records and deliverables in accordance with the project quality plan/requirements

- Documents approval of completion of project activities and formally transfers project deliverables to the program sponsor/user

- Ensures materials and accountable property are dispositioned/transferred per property management procedures in Manual 2, "Logistics and Property Management"

- Prepares and issues the Project Completion Report per GDE-70

- Prepares a checklist of closeout activities and develops schedule to complete. Tracks activities to completion

- Completes formal transfer of all documents, materials, equipment, manpower, and responsibilities to company organizations and program sponsor/user; obtains necessary approvals

- Supports the DOE-ID project manager in obtaining authorization for start of operations/project closeout.

11.2 Engineering Strategy and Process

The engineering strategy of the project is to perform design activities in a uniform and consistent manner that complies with local, state, and federal codes, standards, and laws. The engineering team uses company procedures and processes (see Table 11-1) to deliver designs and products that meet requirements, on time and within budget. MCP-2811, MCP-3772, and GDE-70 assist engineering personnel in performing engineering activities in a cost-effective manner that reduces rework and the potential for errors. Engineers, supporting the project, employ federal and industry standards in their designs. The DOE-ID Architectural Engineering Standards is available on the Electronic Document Management System (EDMS) or directly at http://www.inel.gov/publicdocuments/doe/archeng-standards.

The Engineering Directorate provides processes, procedures, and tools for the project design engineers. This information is available on the Engineering Directorate Homepage at http://engineering.inel.gov/. A summary of the data available on the Engineering Directorate homepage includes:

- Engineering References (links to the INEEL technical library, regulations, standards, etc.)
- Organization and People (list of subject-matter experts, registered professional engineers, and system engineers)
- Conduct of Engineering and Configuration Management Work Processes Project Engineering information (list of engineering processes and links to procedures, guidelines, and forms)
- Engineering Tools (links to the Engineering Change Form tracking system, Configuration Management (CM) Database, analysis software V&V library, and the vendor data system)
- Work Requests/Performance Assessments
- Directorate Administration (roles, responsibilities, accountabilities, and authorities [R2A2s], Engineering Strategic Plan, engineering interface agreements)
- Engineering ISMS-Voluntary Protection Program Safety by Design information.

Cost and schedule estimates of design tasks are prepared in accordance with work planning guidance and included in appropriate BCPs for the project. Actual performance is tracked using earned value techniques. Trigger points for value earned on tasks is agreed upon with Project Management.

The design engineer is responsible for designing a product that meets the technical requirements. The design control process is accomplished using MCP-2811, "Design Control" and Form 431.37, Engineering Change Form. This process is used to document a new design and modifications. Design analysis is performed and documented using MCP-2374, "Analysis and Calculations," and Form 431.02, Engineering Design File, and the optional TEM-21, "Calculation Sheet." Design requirements are prepared in accordance with MCP-9185, "Technical and Functional Requirements," and the design is verified in accordance with MCP-9217, "Design Verification."

Table 11-1. Project Processes.

Phase	Project Manager	Project Engineer	System Engineer	Design Engineer
Preconceptual Planning	Form project team Assign Project Engineer Develop DWP Prepare Justification of Mission Need (MCP-9106) Authorize conceptual design activities			
Conceptual	Develop PEP (GDE-70 Sect. S) Complete CD-0 and CD-1 activities and approve preliminary baseline/proposed work plan (MCP-9106) Initiate Davis-Bacon review (MCP-2874) Develop a Risk Management Plan Determine appropriate commercial practices (MCP-9106, PLN-920) Develop preliminary project acceptance and turnover (MCP-2869) Develop project cost estimate (MCP-2871, GDE-70) Develop performance measurement methods Manage changes to scope, schedule, and cost (MCP-3416) Identify trends (MCP-3805) Prepare the Acquisition Plan (GDE-70) Develop Records Management Plan	Design management Design to cost Determine safety category using Form 414.70 & 414.02 (MCP-540) Configuration Management Plan QA Plan (PLN-694) Safeguards and Security Plan Assess pollution prevention opportunities (MCP-3690) Initiate Request for Determination of Safety Analysis Requirements using Form 431.12 (GDE-70) Identify preliminary hazards using Form 430.10 (LST-99) Determine design verification method (MCP-9217) Prepare the Conceptual Design Report	Prepare Engineering Change Form using Form 431.37 (MCP-2811) Complete a technical risk screen using Form 431.56 Identify configuration managed SSCs (MCP-2811, App. A)	Perform value engineering to evaluate alternatives (GDE-70) Develop Task Baseline Agreements using Form 136.35 Perform design analysis using Form 431.02, EDF (MCP-2374) Determine safeguards and security requirements (MCP-9185) Develop preliminary technical and functional requirements (MCP-9185)
Project Execution	Authorize project activities Identify applicable facility authorization agreements and permits (MCP-3567) Perform self assessments as needed (GDE-77) Manage procurement of materials and services (MCP-592)	Determine if a Professional Engineer is required (MCP-3534) Initiate the Hazards Identification Mitigation process (MCP-2863) Prepare Inspection Plans Define supplier quality requirements and perform quality verification activities (MCP-3573) Ensure configuration management	Identify affected SSCs and list on the ECF Identify affected documents, drawings, database, and required training on the ECF Decide if a Fire Safety Analysis or Fire Hazard Analysis is required and incorporate information on the ECF (MCP-583, -579, and PRD-199) Include the risk screen on the ECF Approve test plan and test procedures (MCP-3056) Review the SAR or ASA for modification (MCP-2449 or MCP-2451) Identify applicable technical safety requirements (MCP-2450)	Prepare final design (MCP-2811 and -3772 and GDE-70) Arrange for surveying (MCP-3529) Coordinate mapping with the GIS database and A/E drafting Prepare final design requirements (MCP-9185, LST-99, LST-95, DOE-ID AE Standards, Idaho Code Title 54) Consider ALARA (MCP-91) Consider fire protection requirements (PRD-199) Write specifications (MCP-9359, Guide Specs.) Develop Vendor Data Schedule (MCP-3573) Prepare drawings

Table 11-1. (continued).

Phase	Project Manager	Project Engineer	System Engineer	Design Engineer
			Identify applicable Radiation Control requirements Add new hazards to the facility hazard list (MCP-6206) Conduct USQ using Form 431.19B (MCP-123) Conduct an environmental evaluation (MCP-3480, Env. Checklist Form 451.01) Ensure configuration controlled items are managed in the CM database (MCP-3574) Assign equipment numbers to SSCs Dedicate commercial grade items (MCP-3772)	(MCP-2377) Document design analysis using Form 431.02 (MCP-2374) Develop Test Plan and Test Procedures (MCP-3056)
Construction	Manage and resolve field problems and change/clarify subcontractor requirements (GDE-51) Update the PEP with acceptance and turnover planning or prepare a Turnover and Acceptance Plan (MCP-2869, GDE-70)	Evaluate and disposition nonconforming items using Form 431.47 (MCP-2811, -538) Manage engineering changes resulting from construction changes (MCP-9106, GDE-51)	Test the final design (MCP-3056) Label equipment (STD-7006)	Make design changes (MCP-2811)
Project Acceptance/ Closeout	Conduct acceptance activities (MCP-2869) Prepare a Project Completion Report (GDE-70)	Develop a project closeout checklist (MCP-2869) Sign ECF at turnover Ensure project records are in records management (MCP-557) Verify quality records (MCP-557, PLN-598)	Ensure all documents noted on the ECF as required for turnover to operations are updated Ensure all other documents are updated, sign and closeout the ECF Identify Essential and Master Facility Drawings (MCP-2377) Identify vendor data necessary for O&M (MCP-3573) Ensure all master equipment data is in the Passport system (MCP-6402)	

The project engineer has overall responsibility for the technical adequacy of the project design. The project engineer, with support from the System Engineer, is responsible for determining the safety category of structures, systems, and components (SSCs) using MCP-540. The project has safety significant and consumer grade SSCs. The safety category is the major criteria for determining whether a SSC requires configuration management (see MCP-2811, Appendix A). If an SSC is identified in the PDSA, then the SSC is configuration controlled. The project engineer and the system engineer perform a technical risk screen of the engineering design using MCP-2811 and Form 431.56. The project engineer is also responsible for determining when a registered professional engineer is required to sign project design documents (see MCP-3534, "Use of Registered Professional Engineers").

The system engineer supports the project engineer and is responsible for overseeing the MCP-2811 and ECF process. The entire design is tracked until project closeout using Form 431.37. PLN-964, "Competency Commensurate with Responsibility (CCR), INEEL System Engineer" documents the System Engineer training and qualifications.

Engineering functional management, from the Engineering Directorate, will review, as required, design documents to ensure the project is producing a design that is consistent with the Engineering Directorate's requirements.

The Engineering Directorate provides the project with engineers that are trained and qualified. Training requirements are documented in the Training Records and Information Network system for the Conduct of Engineering. The R2A2s of engineering functional management are documented on the Engineering homepage: http://engineering.inel.gov/organization/R2A2Matrix.htm.

Engineering products such as EDFs, specifications, plans, drawings (see Table 11-1) are required to be controlled in EDMS and are included in the Information Repository as required by MCP-204. Document Control will ensure engineering documents are available on EDMS and are identified in the IR. Document Control supports engineering by ensuring appropriate documents are reviewed in accordance with MCP-240, "ER/D&D&D Operational Review Board Process."

The engineering strategy and processes, implemented by the project, are consistent with company expectations and comply with the Conduct of Engineering procedures, guides and standards.

11.3 Acquisition Strategy and Processes

11.3.1 Purpose and Objectives

This section provides the objectives, definitions, background, and plan for acquiring goods and services for the project.

The acquisition strategy and plan (DOE-ID 2002f) for the project provide the necessary guidance to acquire goods and services throughout the various project phases. The strategy to obtain goods and services meets the following general objectives:

- Satisfies project needs (technical, budget, and schedule)
- Is cost-effective and efficient (results in best value)
- Is based on understanding and management of risks
- Optimizes use of resources (internal and external)

- Follows DOE and BBWI policies and procedures.

11.3.2 Definitions

The following definitions originate from DOE Order 413.3, "Program and Project Management for the Acquisition of Capital Assets."

- *Acquisition Strategy*: "The acquisition strategy establishes the framework within which detailed acquisition planning and program execution are accomplished. The requirements document describes what DOE needs to buy, while the acquisition strategy describes how the Department will acquire capital assets. Once approved, it should reflect the approving authority's decisions on all major aspects of the contemplated acquisition. The acquisition strategy describes the relationships of essential program elements (e.g., management, technical, resources, testing, safety, procurement, and contracting)."

- *Acquisition Plan*: "The Acquisition Plan provides the procurement and contracting detail for elements of a system, program, or project. The Acquisition Plan is execution oriented and provides the framework for conducting and accomplishing the procurements and includes actions from solicitation preparation."

11.3.3 Acquisition Plan Summary

Overview. BBWI will perform project management and related service activities, procurement, and construction management. Construction quality assurance will be subcontracted for the ICDF landfill and evaporation ponds, but all other inspections will be completed by BBWI. Construction subcontractors will be used for site preparation, structural work, and mechanical/electrical/equipment installation. The acquisition plan for decontamination, decommissioning, and demolition will be determined at a later date. Because DOE Order 413.3 was implemented after the start of the project, the acquisition plan called for by the order was not required. However, the project did develop an acquisition plan to illustrate that all acquisitions will follow BBWI's approved procurement processes. The project Acquisition Plan will be provided to DOE as a separate document for review and approval, following current DOE practices.

Project Management and Related Services. BBWI will provide project management, planning and controls, procurement, construction management, and associated project services. BBWI will evaluate the need to utilize specialty engineering, staff augmentation, and other consultants on an as-needed basis. As mentioned previously, the SSSTF will utilize the BBWI design engineering whereas the ICDF will utilize a subcontractor through a "design/build" contract.

11.4 Project Procurement Strategy

The project team's strategy is to get the right materials and services to the project on schedule and within budget. The procurement strategy considers the types of actions necessary to competitively acquire materials and services throughout the various phases of the project. It includes selection of the method of acquisition, use of purchase card for low-value local items, contracts for services, and purchase orders for commercial and engineered items. The procurement office is responsible for working with project personnel to identify the best method for acquisition. Figure 11-1 illustrates the project procurement system process flow.

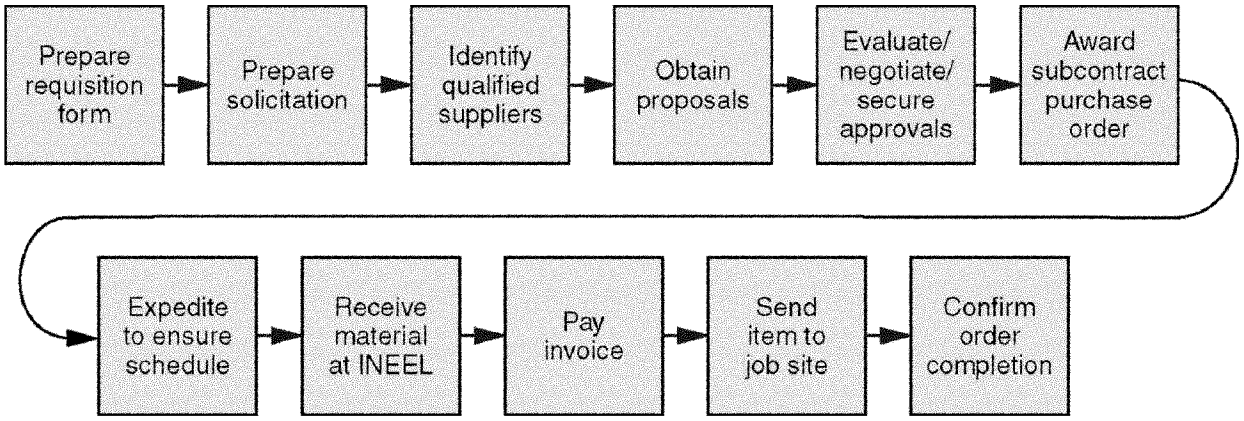

Figure 11-1. The procurement process.

Make/buy decisions, conducted in accordance with MCP-592, "Acquisition of Goods and Services," start the process. If the decision is "buy" and a specification/SOW is required to describe the item or service, the team prepares the SOW in accordance with MCP-9359, "Specifications and Statements of Work." The team purchases commercial items using a salient characteristics list. The team performs planning acquisitions in accordance with MCP-3512, "Procurement Planning," as applicable.

The solicitation, evaluation, negotiation, and award of contracts and purchase orders will be performed in accordance with BBWI's DOE-approved procurement system. Source lists are developed using existing, qualified suppliers to the maximum practicable extent. If a source of supply is not readily identifiable, the Internet is used as a supplier location tool. Selection criteria are used for high-risk, engineered items, while the lowest, responsible, responsive price received determines the supplier of commercial items.

The team anticipates that fixed price contracts can be used for the majority of items, and uses fixed unit rate contracts for services and for materials that cannot be adequately described in a specification.

11.5 Construction Strategy and Processes

The construction strategy and processes provide the necessary structure and approach for construction of the project. This section outlines the technology required, risk levels, subcontracts, work processes, and team member roles and responsibilities.

11.5.1 Technology Required

The project uses standard construction technology and materials. Construction is based on experience at INEEL and on lessons learned constructing similar facilities. Completion of the project does not require development of new technology.

11.5.2 Construction Risk

The project team will use standard construction techniques.

During construction, INEEL will have a full-time CC, FE, STR, and several discipline-specific quality inspectors dedicated to this project. Their responsibilities will include overseeing the construction subcontractor's quality control/inspection activities for compliance with the design and recommending acceptance or rejection of the work and equipment. While the CC, FE, STR, and inspectors will be active

primarily during the construction phase, they will be involved in project planning and tracking throughout the project.

Requirements for the construction safety program are defined to the subcontractors in the contract documents, general conditions, and special conditions. This program is well established and has a good track record. Since standard construction techniques are anticipated, the risk is estimated to be low to moderate. This program is managed by the BBWI Construction Management and implemented by the CC, FE, STR, and a construction safety professional. The subcontractor is required to have a full-time safety officer on the project. During construction, weekly progress meetings will be held with the subcontractor, and safety will always be the first item on the agenda. Accident prevention will be stressed.

11.5.3 Construction Subcontracts

As discussed previously, construction of the ICDF and SSSTF will be completed by subcontractors through firm fixed-price type contracts. Prior to awarding contracts, the project team evaluates suppliers to ensure that they are capable of providing the item, material, and or services in full compliance with the requirements of the procurement documents.

11.5.4 Work Process

Four major subcontracts are planned to complete the majority of the construction work on the project:

- ICDF landfill and evaporation ponds construction
- ICDF landfill and evaporation ponds CQA
- SSSTF construction
- ICDF/SSSTF operations.

Construction of these facilities will follow the RD Work Plan.

Before the start of construction, the project team will establish the boundaries for the project, including access routes to and from the construction area. The team will also identify construction management, security, and any required Rad-Con facilities to support the construction activities.

Emergency requirements and support requirements for subcontractors, office, and storage areas will be coordinated with operations. Operations Interface and Construction Safety Risk factors have been evaluated in accordance with MCP-9106 to establish the level of commercial practices that would be applied to each subcontract. Additional details are provided in Section 10, Quality Assurance.

The project team followed the "Nine-Block" process outlined in MCP-9106, Appendix D for the two construction projects. The appropriate attributes were identified on the Operations Interface Factors Matrix and the Construction Safety Factors Matrix to determine the level of involvement or risk for each attribute. Team consensus was used to decide the overall level for each phase. The next step was to determine the applicable block in the Commercial Practices Graded Application Matrix. Table 11-2 provides the results of the evaluation.

Table 11-2. Commercial Practices Graded Application Matrix (nine-block process).

		Construction Safety Risk Factors		
		High	**Medium**	**Low**
Operations Interface Factors	**Maximum**	**1** • Pre-Qualified Contractor • STD-101 Chapter Six • Level 2 lockout/tagout (LO/TO) Trained • Full SRM Manual • Full-time Surveillance • Daily Authorization, plan of the day (POD)	**2** • Pre-Qualified Contractor • STD-101 Chapter Six • Level 2 LO/TO Trained • Full SRM Manual • Part-time Surveillance • Daily Authorization POD	**3** • Pre-Qualified Contractor • STD-101 Chapter Six • Select SRM Manual • Part-time Surveillance • Daily Authorization POD
	Moderate	**4** • Pre-Qualified Contractor • STD-101 Chapter Six • Level 2 LO/TO Trained • Full SRM Manual • Full-time Surveillance • Daily Authorization POD	**5** • Pre-Qualified Contractor • STD-101 Chapter Six • Level 2 LO/TO Trained • Select SRM Manual • Part-time Surveillance • Daily Authorization POD	**6** • STD-101 Chapter Six • Part-time Surveillance • Daily Authorization POD • Contractors Work Processes approved by BBWI
	Minimum	**7** • Pre-Qualified Contractor • Level 2 LO/TO Trained • Full SRM Manual • Full-time Surveillance	**8** • Select SRM Manual • Part-time Surveillance • Contractors Work Processes approved by BBWI	**9** • Part-time Surveillance • Contractors Work Processes approved by BBWI

As a result of this evaluation, the approaches to work execution described in the following paragraphs will be applied.

Construction Management, Environmental, Safety, Health, & Quality Assurance.

1. The construction subcontractors will be prequalified by construction ES&H and procurement quality.

2. The construction subcontractors work process will be approved by BBWI, or at their option they may adopt the BBWI subcontractors requirements manual. See GDE-51, Section IV.J, for details.

3. All hazards will be identified for this project using the hazards identification and mitigation process.

4. The working status of this project will be presented at the facility's plan-of-the-day meetings.

5. The subcontractors will be required to prepare and work to the Job Safety Analysis (JSA) for their scope of work. The principles of the ISMS will be incorporated using the JSA, or a subcontractor's mitigation plan approved by BBWI.

6. Outages will be coordinated through the STR with Operations.

7. A Project Work Order will be required for this subcontract in accordance with Standard (STD)-101, Chapter 6.

8. Level 2 lockout/tagout required.

9. Part-time surveillance by construction management.

Construction subcontractor employees are required to have training and qualifications commensurate with work being performed. Replacement of key subcontractor personnel (e.g., field superintendent, safety) during a project requires notification, evaluation of qualifications, and approval by construction management. Construction subcontractors are required to ensure employees are qualified for the activity they will perform. Certified welders and journeyman crafts (e.g., electricians, carpenters, welders, fitters, ironworkers, equipment operators, and pipe fitters) are examples of construction personnel required for this project.

During construction of the project, the construction subcontractors will be required to provide logic-based schedules on a monthly basis. The schedule will include analysis sections to identify missed milestones, activities behind schedule, and design/construction concerns. The subcontractors will also be required to provide plans on how they propose to recover from each concern. Reports will be reviewed by BBWI, and negotiated with the subcontractors to produce resolutions in the best interest of the government. The subcontractor will also be required to submit a three-week rolling schedule during project construction.

As-builts will be performed during the construction phase to ensure accurate construction documents that reflect the final configuration, where necessary.

Construction acceptance, turnover, and closeout shall be performed in accordance with MCP-2869, "Project Turnover and Acceptance." Planning for the acceptance testing, transfer, and closeout will be in accordance with GDE-51, Section IV.D, "Testing and Turnover Planning," and the turnover process shall be as outlined in GDE-51, Section V.A, "Acceptance/Closeout Checklist." Deficiencies from project walkthroughs, construction punch lists, facility acceptance reviews, etc. shall be entered on a controlled Project Deficiency Status Report. This report can be attached to Form 432.04, "Inspection and Project Transfer" for both partial and final project transfers.

The selected construction subcontractors will have to ensure that they have the resources to complete the scope, meet the construction schedule, and ensure employees are qualified for the activity they will perform.

BBWI Engineering will provide A-E support during construction of the SSSTF. Engineering will review subcontractor submittals and shop drawings for compliance with contract documents. Proposed changes will be reviewed and dispositioned. Approved changes will be documented and controlled in accordance with approved change order procedures.

The construction management quality engineer will develop a construction quality inspection plan for all Safety Class I, II, and III construction activities to document all tests and inspections specified. During the construction phase, an independent inspector shall use the quality inspection plan to inspect the construction project. The FE will develop a construction quality inspection plan for all Safety Class IV construction activities. The FE or an independent inspector as outlined in the inspection plan will complete the inspections. The subcontractor will be responsible for inspecting, recording, and submitting the results through the vendor data system of all inspection required by the project.

All tests requiring verifying conformance of an item or system to specified requirements will be identified in the construction quality inspection plan or referenced in the procurement construction documents. The construction and procurement documents specify the acceptance criteria characteristics to be tested, test personnel qualifications, and test methods. The documentation of the test results and the conformance with criteria will also be defined.

The subcontractors will ensure that all calibrated equipment required for inspections is controlled, maintained, and calibrated and meet all requirements of the BBWI equipment calibration program.

11.6 Turnover and Acceptance Strategy/Processes

The project team will develop a construction turnover report when construction nears completion. The purpose of the report will be to establish a baseline for the testing, transfer, and closeout of the project to ensure that all turnover/acceptance phases are completed in accordance with requirements.

The report will identify the turnover/acceptance activities based on the process methodology provided in Section U of GDE-70 and depicted in Figure 11-2. The team is using checklists from Section U of GDE-70 and Section V.A of GDE-51 to verify the completeness of the turnover/acceptance report.

Prior to final turnover, an acceptance review (i.e., management self-assessment) will be conducted, as earlier discussed in Section 11 (ES&H/National Environmental Policy Act [NEPA]) of this plan. A final acceptance review follows completion of all field work and completion and submittal of subcontractor's documentation. Among the tasks the Subcontractors perform are the following:

Project file transfer and financial closure activities will be completed as described in Project Management Guides (see PRD-6).

Planning for the acceptance testing, transfer, and closeout will be in accordance with GDE-51, Section IV.D, "Testing and Turnover Planning."

The overall turnover process shall be as contained in GDE-51, Section V.A, "Acceptance/Closeout Checklist."

Subcontractor requirements for closeout shall be as contained in GDE-51, Section SC-25, "Construction Project Completion, Punchlist, Transfer and Acceptance."

Testing and turnover particulars for the project shall be performed in accordance with MCP-2869, "Construction Project Turnover and Acceptance."

This review is to assure all subcontractor obligations are complete and the ICDF Complex Project is ready for safe and efficient operations. This turnover is defined as the point in time that the construction subcontractor turns over the project to the ICDF project team. It will include a safety review to assure that the ICDF Complex Project is safe and in environmental compliance. The process methodology that the project will follow is based on Section U of GDE-70. The Roll Down Requirements Matrix maintained by the Safety, Health and Quality Assurance lead lists the documents applicable to the projects.

11.6.1 System Operability Testing

The operations team will develop and perform the SO testing of the project facility to document that the project components and systems function as designed and according to project design requirements.

- MCP-3056, "System Operability (SO) and Integrated Tests"
- MCP-2869, "Construction Project Turnover and Acceptance."

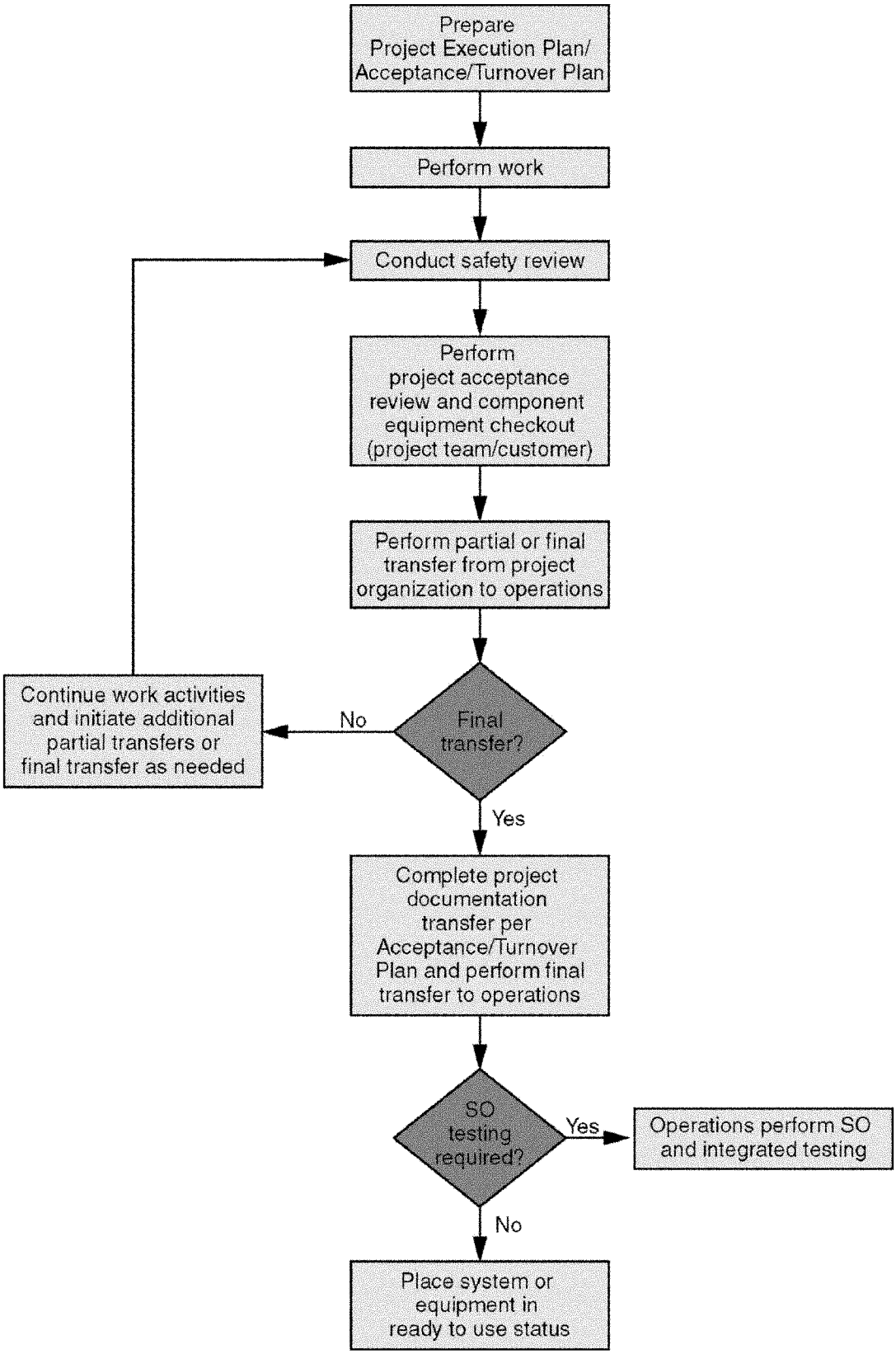

Figure 11-2. The turnover/acceptance process.

11.6.2 As-Built and Closeout Documentation

The Turnover/Acceptance report will identify all closeout activities to specifically address the following actions:

- Develop a project-specific closeout checklist based on GDE-70 and GDE-51 guidance.
- Close out charge numbers as soon as each performing organizations have completed activities. The charge number for document control will be left open until every activity is completed.
- Complete vendor data equipment sheets.
- Complete photographic documentation.
- Close out project files in accordance with MCP-557, "Managing Records."

The team will identify essential as-built drawings in the Turnover/Acceptance report. The essential as-built drawings will be created immediately following completion of construction in accordance with MCP-2377, "Development Assessment and Maintenance of Drawings." The Turnover/Acceptance report will identify the required process to modify the Essential Drawing List, and/or take exception to this guidance.

The team will enter and control deficiencies from project walkthroughs, construction punch lists, SO testing, facility acceptance reviews, etc., on Form 432.68, "Project Deficiency Status Report." This report will be attached to Form 432.04, "Inspection and Project Transfer," for both partial and final transfers.

The team will complete and submit a Project Completion Report to the project manager. The report will be submitted within 120 days from the date of the final project transfer. An interim report may be submitted should outstanding issues prevent the Final report completion at the 120-day milestone. The final report will address the following items.

- Summary of any open items
- Technical, cost, and schedule baseline accomplishments
- Final cost report (with claims settlement strategy, where appropriate)
- Shutdown and deactivation/decontamination/decommissioning planning
- Closeout approvals
- Permits, licenses, and/or environmental documentation
- Contract closeout status
- Lessons learned
- Any adjustment to obligations and costs
- Photographic documentation

- Baseline change proposal log
- Identification of official project files.

11.7 Operations Strategy and Processes

The ICDF Complex will be operated under a fixed priced subcontract administered by BBWI under the BIC subproject contained in the Idaho Completion Project (ICP). This facility will be operational for approximately 15 years, at which time the facility will be closed and long-term monitoring will commence.

11.8 Shutdown and Closure Strategy

After the project team completes the operational phase of the project the landfill will be capped. Subsequently, the ICDF Complex will be turned over to the INEEL Inactive Sites Program for disposition. The transition phase of the facility occurs once the project team declares the facility as excess to current and future DOE needs. Facility transition and disposition activities must incorporate integrated safety management at all levels to provide cost-effective protection of workers, the public, and the environment. To accomplish this, the project team will place the facility in a stable and known configuration and facility hazards will be identified and mitigated or eliminated. Programmatic and financial responsibilities will then be transferred from the project to the Inactive Sites Program. Figure 11-3 illustrates the shutdown and closure process flow.

Following operational shutdown and transition of the project facility, the Inactive Sites program's first disposition activity is to deactivate the facility. Deactivation places the facility in a safe shutdown condition that is economical to monitor and maintain until the eventual decommissioning of the facility.

The project facility will have residual contamination from operations. Therefore, deactivation of the facility will occur as soon as reasonably possible. Deactivation places the facility in a low-risk state with minimum surveillance and maintenance requirements.

The final disposition activity for the project facility is decommissioning, during which Inactive Sites program takes the facility to its ultimate end state through decontamination and dismantlement.

After decommissioning is complete, the project team anticipates that the project facility will have been completely removed; however, the surrounding area may require DOE control for protection of the public and the environment (long-term stewardship) or additional environmental remediation.

Decommissioning the project facility is then performed to remove the radioactive and hazardous materials so that risk to human health and the environment is eliminated. The objectives of decommissioning planning are to:

- Maintain an integrated and seamless process linking surveillance and maintenance, deactivation, and decommissioning with the previous life-cycle phases
- Manage the risks posed by the facility (e.g., radioactive and hazardous materials, mechanical hazards)

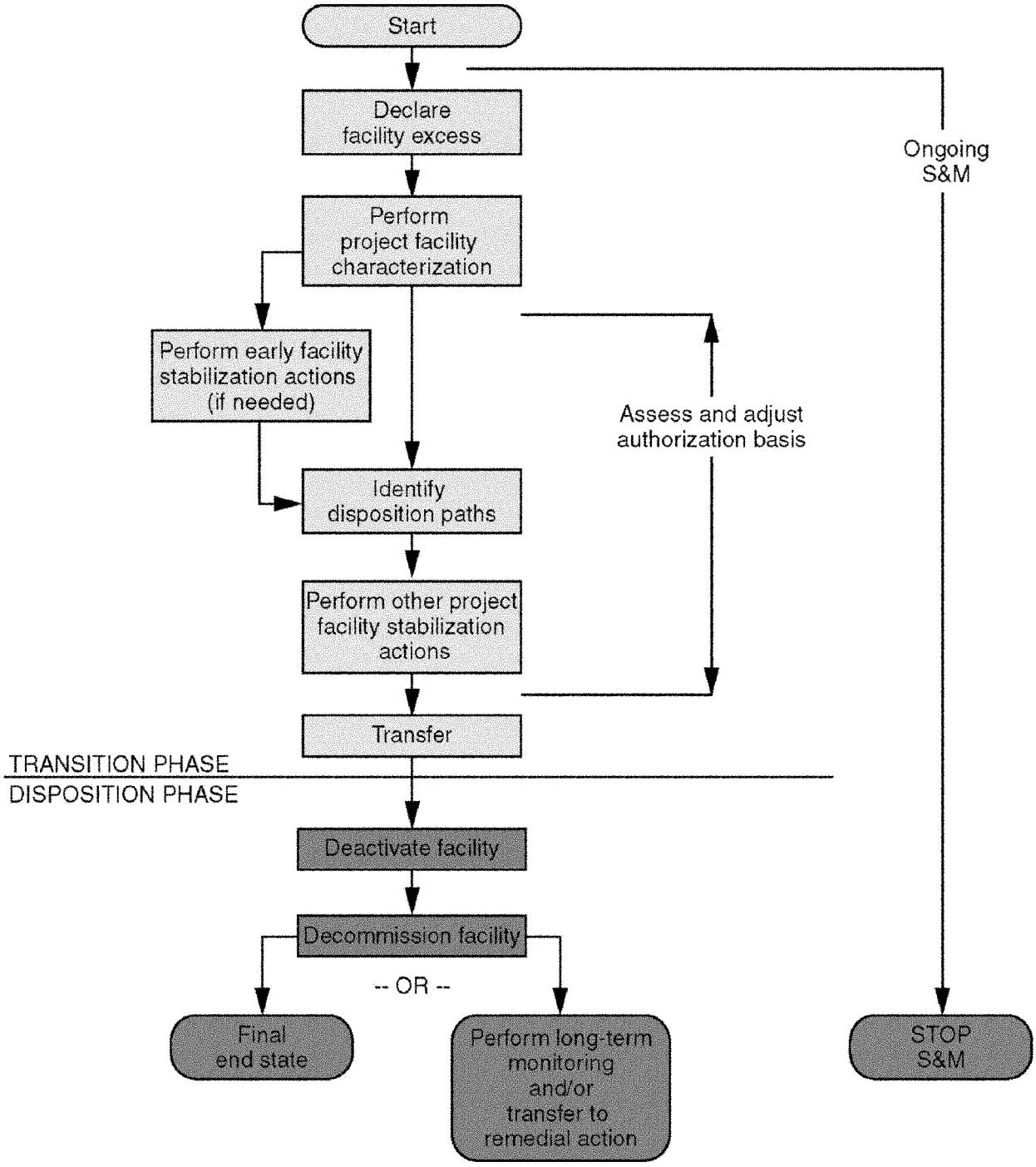

Figure 11-3. The shutdown and closure process.

- Minimize the amount of waste zone material generated and the generation of waste zone materials requiring special treatment (e.g., TRU waste and mixed waste)

- Minimize the decommissioning costs.

Both the risks and final goal of decommissioning should be identified. Radioactive and hazardous materials remaining in the facility will be identified through process knowledge or sampling and analysis.

After the facility has been characterized, the project team has identified one or more of the following endpoints as the final goal of decommissioning:

- Storage—the facility is placed in a condition that allows it to be safely stored and subsequently decontaminated to levels that permit release for unrestricted use. The facility will need to be monitored and maintained to prevent release of contaminants.

- Decontaminated—the facility is dismantled and decontaminated to a level that permits the property to be released for unrestricted use. Secondary waste will be generated and require management.

- Disposed—the facility is dismantled, packaged, transported, and disposed at appropriate facilities.

Waste zone materials will be segregated and disposal volume will be minimized.

Implementation of the decommissioning phase of the project facility will depend on many factors such as the material inventory remaining in the facility equipment at shutdown and the nature of the materials, the ease in which the material inventory can be removed, the ease in which internal and external equipment surfaces can be decontaminated, equipment accessibility, and modularity of the equipment and facility.

Historically, DOE has mandated that nuclear facilities and non-nuclear facilities that handle radioactive materials be designed considering end-state decontamination and decommissioning. This design criterion has been implemented on a graded basis and rests on the professional judgment of the facility designers and engineers. A good facility design considers the needs of the decommissioning phase of a project and obtains multi-disciplinary input early and often through value engineering and design level reviews. The primary benefits resulting from good design for decommissioning is reduced worker hazards and reduced overall project cost. Overall project cost is reduced through less generation of waste zone material, more efficient management of waste zone material; reduced worker exposure to radiation and radioactive and hazardous materials, and simpler work processes.

12. ENVIRONMENTAL, SAFETY, AND HEALTH

This section outlines the roles and responsibilities of the team members responsible for protecting the environment, employees, and the public from the effects or outcomes of the project. It includes environmental protection, radiological controls, safety and health.

12.1 Environmental Protection Aspects

12.1.1 Environmental Requirements

The project team is conducting the project under the OU 3-13 ROD. This CERCLA ROD defines the ARARs that must be implemented. The team is implementing the CERCLA ROD in accordance with the process outlined in the FFA/CO for the INEEL.

The project team will also satisfy internal INEEL requirements and DOE orders. Companywide Manual 8, "Environmental Protection and Compliance," documents the environmental protection program. Responsibilities for implementing the program are defined in a number of environmental program requirements documents and implementing MCPs. Environmental requirements and instructions associated with a CERCLA action are documented through implementation of MCP- 3480, "Environmental Instructions for Facilities, Processes, Materials and Equipment." An environmental checklist, prepared in accordance with MCP-3480, will reference project ARARs and define additional environmental requirements for the project. As a facility managing low-level and TRU mixed waste, DOE Order 435.1, "Radioactive Waste Management," applies and must be implemented. Additional DOE Orders defining environmental related requirements include DOE Order 5400.1, "General Environmental Protection Program" and DOE Order 5400.5, "Radiation Protection of the Public and the Environment."

Based on DOE policy, the CERCLA process is relied upon to address NEPA values and public involvement procedures. Consequently, no separate implementation of NEPA is required for CERCLA projects at INEEL.

The Environmental Affairs organization assigns a project environmental lead to ensure project environmental requirements are properly implemented, integrated into work planning, and ultimately satisfied.

12.2 Radiological Controls Aspects

The Radiological Control Program for the INEEL is documented in Manual 15A. This program meets the requirements of 10 CFR 835 and DOE O 441.1 series. The project manager has the overall radiological control responsibility for the project. Each person assigned to work on the project is responsible for proper radiological control (Rad-Con). The project team includes the Radiological Control Organization assigned to advise the project on maintaining compliance with the Radiological Control Program and supporting procedures.

12.3 Safety and Health Control Aspects

The project safety and health representative supports the project manager in implementing the project safety and health program. Safety and health is responsible for coordinating industrial safety and industrial hygiene (Company Manuals 14A and 14B) support within the Project.

The project fully embraces the INEEL ISMS, in both core functions and guiding principles. The core functions of ISMS are the following:

- Define the scope of work
- Identify the hazards
- Mitigate the hazards
- Perform work within their controls
- Provide feedback and lessons learned to continuously improve work processes.

The eight guiding principles of ISMS are the following:

- Line management responsibility for safety
- Clear roles and responsibilities
- Competence commensurate with responsibilities
- Balanced priorities
- Identification of safety standards and requirements
- Hazard controls tailored to the work being performed
- Operations authorization
- Worker involvement.

These functions and guiding principles will be used during project work performed by BBWI, and will be flowed down to subcontractors through subcontract requirements and for self-performed work through requirements defined in the work packages. These principles and functions will be incorporated into the operating procedures. Verification that ISMS has been incorporated into these documents will be accomplished using self-assessment programs. Health and Safety Plans for specific field activities also identify safety requirements that will be included in the work control documents or subcontracts.

13. SAFEGUARDS AND SECURITY

The INEEL Safeguards and Security Program has an effective process to protect facilities, information, and nuclear material. The project team follows this same process to comply with DOE and INEEL requirements. They protect and control safeguards and security interests to preclude or minimize unauthorized access, unauthorized disclosure, loss, destruction, modifications, theft, compromise, or misuse to comply with DOE Order 5632.1C, "Protection and Control of Safeguards and Security Interests."

13.1 Security Plans

Project plans implement security requirements. Specifically, the "INEEL CERCLA Disposal Facility Physical Security Plan" (PLN-940) details the protection requirements and access controls. It was developed according to MCP-286, "Physical Security Planning."

13.2 Property Protection Area

The project area is established as a property protection area to protect against damage, destruction, or theft of government-owned property. The property protection area complies with DOE M 5632.1C-1, "Manual for Protection and Control of Safeguards and Security Interests." The area has access controls, which were established according to MCP-303, "INEEL Access Controls," and Protective Force personnel control access to the area. It also has physical barriers. Security badges are required to access the area, and vehicles and items are subject to inspection.

13.3 Safeguards and Security Organization

Safeguards and Security professionals implement security requirements for the project. The project physical security officer ensures security requirements are implemented properly.

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Appendix A

Constraints and Assumptions

Appendix A

Constraints and Assumptions

The constraints and assumptions associated with the ICDF Complex Project are as follows:

- All waste disposed at the ICDF Complex must be from a CERCLA remedial action including D&D&D waste.
- No additional utilities will be required that are not included in the approved Title II design.
- Startup activities will be part of the ICDF landfill and evaporation ponds project to assure adequate coordination and operational integrity.
- Resources and funding will be available to complete the scope of work.
- All activities will be started and completed on or ahead of schedule as shown in the cost account plans.
- All resources will be available as scheduled.
- Award of subcontracts will not be protested or delayed.
- Decontamination of contaminated equipment will be performed by INTEC facilities and/or on temporary pads until the minimum treatment facilities are operational.
- No discrepancies exist between DOE Orders, federal and state statutes, and the Federal Facility Agreement and Consent Order for the Idaho National Engineering and Environmental Laboratory that will adversely affect activities at INTEC.
- All activities will be conducted in accordance with policies, statutes, and regulations in place at the signing date for the OU 3-13 ROD.
- Litigation and legal court decisions will not impact baseline agreements, work plans, or RODs.
- A full-time equivalent is equal to 1,800 labor hours for planning purposes.
- Average required training and staff meetings will not exceed 75 hours and $320 per assigned individual per year.
- The administrative costs for office furniture, supplies, and paper (including network printer support) will not exceed average per person rates incurred in 2001 for WAG 3.
- Personal protective equipment will be provided by the individual projects for field and site workers and will not exceed $3,000/year.
- There will be no changes in contractual charging practices that will impact scope or budget.
- Detailed scope descriptions and assumptions are maintained in the project records.

- Currently identified site location will not change for any reason.
- Areas of radiation or hazardous chemical contamination will not be encountered during construction activities.
- Access to the Rye Grass Flats borrow source will not cause any schedule delay.
- All construction activities will be in accordance with the approved Title II design.
- Construction work will experience no delays from standby time.
- Haul roads will remain in place following construction activities at both the ICDF and Rye Grass Flats.
- INEEL craft personnel will be available upon request with no delay to the project.
- Work control procedures will not take more than 5 days to compete.
- Construction work areas will be free of contamination and cultural resources; therefore, no delays will result.
- Agency reviews and approvals remain on schedule.
- No work stoppages will occur because of public environmental activist groups or individuals.
- No major design changes will occur that adversely affect the schedule.
- All construction activities will be excluded from all drills.
- Behavior based loss program will be implemented and directed by the ICDF project manager.
- To address corrective actions, schedule and cost contingencies are included in the correction action activity on the project schedule.
- Construction of the ICDF support facilities, minimum treatment facilities, Cell 1, and the evaporation ponds will be completed at the same time so that startup, inspections, and remedial action report activities will be accomplished simultaneously.
- No major changes will occur to the O&M plan.
- The equipment will consist of a front-end loader, road grader, forklift, bulldozer, compactor, water truck, pickup truck, portable pump for evaporation pond, seventy-five (75) roll-on/roll-off containers, and two (2) container trucks. This assumption will be refined in an equipment needs white paper.
- The equipment will be the responsibility of the subcontractor awarded the field construction subcontract.
- Utility tie-ins and hook-ups will occur as scheduled, and any INTEC-related outages will be scheduled so that the tie-ins and hook-ups will occur as scheduled.

- Agency reviews for pre-final inspection, remedial action report, and final inspection will be 30-, 45-, and 30-calendar day reviews, respectively.
- All procedures will be in the O&M manual.
- Agency review and approval of operating procedures will not be necessary.
- IWTS will be used to track the waste.
- Current IWTS documentation will be updated for use at the ICDF Complex.

Appendix B

ICDF Complex Work Breakdown Structure

Appendix B

ICDF Complex Work Breakdown Structure

See the attached Work Breakdown Structure for the ICDF Complex.

Work Breakdown Structure (WBS) Level					Cost Element Item
1	2	3	4	5	
1					**ICDF Complex Project**
	1.1				**ICDF Design**
		1.1.1			ICDF Conceptual (10%) Design
			1.1.1.1		Geophysical/Geotechnical Investigation
			1.1.1.2		ICDF Conceptual Design
			1.1.1.3		Reactive Barrier Literature Study
			1.1.1.4		Conceptual Groundwater Modeling
			1.1.1.5		Sorption Coefficient Literature Study
		1.1.2			ICDF Title I (30%) Design
		1.1.3			ICDF Early Dig and Test Pad Design
		1.1.4			ICDF 60% Design Components
		1.1.5			ICDF Title II (90%) Design
			1.1.5.1		ICDF RD/CWP
			1.1.5.2		ICDF RD/CWP
		1.1.6			Assess ICDF RD/CWP for construction of Cell 2
	1.2				**SSSTF Design**
		1.2.1			SSSTF Conceptual (10%) Design
		1.2.2			SSSTF Title I (30%) Design
		1.2.3			SSSTF Title II (90%) Design
			1.2.3.1		SSSTF RD/CWP
			1.2.3.2		SSSTF RD/CWP
		1.2.4			Soils Stabilization Treatment Unit Design

Work Breakdown Structure (WBS) Level					Cost Element Item
1	2	3	4	5	
			1.2.4.1		SSSTF Subcontractor develops Soils Stabilization Treatment Unit (SSTU) design
			1.2.4.2		Modification to SSSTF RD/CWP for SSTU developed
			1.2.4.3		SSTU design submitted to EPA and IDEQ as a modification to the SSSTF RD/CWP
			1.2.4.4		EPA and IDEQ review of SSTU design
			1.2.4.5		Resolution of EPA and IDEQ comments on SSTU design
			1.2.4.6		SSTU design published and incorporated into Final SSSTF RD/CWP
	1.3				**Remedial Action Work Plan (RA WP)**
		1.3.1			ICDF Complex Remedial Action Work Plan (RA WP)
			1.3.1.1		Develop ICDF Complex RA WP
			1.3.1.2		Submit Draft ICDF Complex RA WP to EPA and IDEQ
			1.3.1.3		EPA and IDEQ review Draft ICDF Complex RA WP
			1.3.1.4		Resolution of EPA and IDEQ comments on Draft ICDF Complex RA WP
			1.3.1.5		Submit Draft Final ICDF Complex RA WP to EPA and IDEQ
			1.3.1.6		EPA and IDEQ review Draft Final ICDF Complex RA WP
			1.3.1.7		Resolution of EPA and IDEQ comments on Draft Final ICDF Complex RA WP
			1.3.1.8		Submit Final ICDF Complex RA WP to EPA and IDEQ
	1.4				**ICDF Complex Startup (SSSTF and Cell 1)**
		1.4.1			Develop ICDF Complex Waste Tracking System
		1.4.2			Develop ICDF Complex O&M Manual
		1.4.3			Develop DOE Order 435.1 Compliance Documents (crosswalk, PA, CA, Disposal Authorization Basis and Statement, etc.)
		1.4.4			Personnel Training
		1.4.5			Startup Assessment
			1.4.5.1		Develop Startup Assessment Plan
			1.4.5.2		Conduct Startup Assessment

Work Breakdown Structure (WBS) Level					Cost Element Item
1	2	3	4	5	
			1.4.5.3		Perform Corrective Actions from Startup Assessment
			1.4.5.4		Closeout Startup Assessment
		1.4.5			ICDF Complex Operation Prefinal Inspection
			1.4.5.1		Develop ICDF Complex Operations Prefinal Inspection Checklist
			1.4.5.2		Conduct ICDF Complex Operations Prefinal Inspection Checklist Walkdown
			1.4.5.3		Resolve ICDF Complex Operations Punchlist (Prefinal Inspection Checklist) Items
			1.4.5.4		Develop and Publish ICDF Complex Prefinal Inspection Report
		1.4.6			ICDF Construction Inspections (Cell 1)
			1.4.6.1		Develop Prefinal Inspection Checklist
			1.4.6.2		Conduct Prefinal Inspection Checklist Walkdown
			1.4.6.3		Publish Prefinal Inspection Checklist Report
		1.4.7			SSSTF Construction Inspections
			1.4.7.1		Develop Prefinal Inspection Checklist
			1.4.7.2		Conduct Prefinal Inspection Checklist Walkdown
			1.4.7.3		Publish Prefinal Inspection Checklist Report
		1.4.8			ICDF Complex Remedial Action Report
			1.4.8.1		ICDF Complex Operations Final Inspection
				1.4.8.1.1	Develop ICDF Complex Operations Final Inspection Checklist
				1.4.8.1.2	Conduct ICDF Complex Operations Final Inspection Checklist Walkdown
				1.4.8.1.3	Resolve ICDF Complex Operations Punchlist (Final Inspection Checklist) Items
			1.4.8.2		ICDF Complex RA Report
				1.4.8.2.1	Develop ICDF Complex RA Report
				1.4.8.2.2	Submit Draft ICDF Complex RA Report to EPA and IDEQ
				1.4.8.2.3	EPA and IDEQ review Draft ICDF Complex RA Report
				1.4.8.2.4	Resolution of EPA and IDEQ comments on Draft ICDF Complex RA Report
				1.4.8.2.5	Submit Draft Final ICDF Complex RA Report to EPA and IDEQ
				1.4.8.2.6	EPA and IDEQ review Draft Final ICDF Complex RA Report

Work Breakdown Structure (WBS) Level					Cost Element Item
1	2	3	4	5	
				1.4.8.2.7	Resolution of EPA and IDEQ comments on Draft Final ICDF Complex RA Report
				1.4.8.2.8	Submit Final ICDF Complex RA Report to EPA and IDEQ
	1.5				**ICDF Landfill Cell 2 Startup**
		1.5.1			Update ICDF Complex O&M Manual for Cell 2 Operations
		1.5.2			Personnel Training
		1.5.3			Startup Assessment (Cell 2)
			1.5.3.1		Develop Startup Assessment Plan
			1.5.3.2		Conduct Startup Assessment
			1.5.3.3		Perform Corrective Actions from Startup Assessment
			1.5.3.4		Closeout Startup Assessment
		1.5.4			ICDF Complex Operation Prefinal Inspection (Cell 2)
			1.5.4.1		Develop ICDF Landfill Cell 2 Prefinal Inspection Checklist
			1.5.4.2		Conduct ICDF Landfill Cell 2 Prefinal Inspection Checklist Walkdown
			1.5.4.3		Resolve ICDF Landfill Cell 2 Punchlist (Prefinal Inspection Checklist) Items
			1.5.4.4		Develop and Publish ICDF Landfill Cell 2 Inspection Report
		1.5.5			Remedial Action Report changes for Cell 2
			1.5.5.1		Develop modifications to the ICDF Complex RA Report
			1.5.5.2		ICDF Complex RA Report modifications submitted to EPA and IDEQ
			1.5.5.3		EPA and IDEQ review of ICDF Complex RA Report modifications
			1.5.5.4		Resolution of EPA and IDEQ comments on ICDF Complex RA Report modifications
			1.5.5.5		modifications published and incorporated into Final ICDF Complex RA Report
	1.6				**ICDF Complex Fleet Equipment**
		1.6.1			Develop ICDF Complex Fleet Equipment needs list
		1.6.2			Procure ICDF Complex Fleet Equipment

Work Breakdown Structure (WBS) Level					Cost Element Item
1	2	3	4	5	
	1.7				**ICDF Complex Construction**
		1.7.1			ICDF Early Dig and Test Pad Construction Activities
			1.7.1.1		2001 Construction on Cell 1 and Evaporation Pond
				1.7.1.1.1	Excavation and construction activities
				1.7.1.1.2	Construction Quality Assurance
			1.7.1.2		ICDF Construction (Cell 1, Phase I)
				1.7.1.2.1	Mobilize personnel and equipment
				1.7.1.2.2	screening of gravel
				1.7.1.2.3	follow-up test pad and mixing system
				1.7.1.2.4	landfill and evaporation pond expanded excavation/buildup
				1.7.1.2.5	Construction Quality Assurance
		1.7.2			ICDF Cell 1 Construction (Phase II)
			1.7.2.1		Mobilize Equipment and Personnel for Phase 2 Construction
			1.7.2.2		Install Sediment and Erosion Controls
			1.7.2.3		Clear, Grub, and Strip Borrow Area
			1.7.2.4		Construct Raw/Fire Water System
			1.7.2.5		Construct Electrical Power Supply System
			1.7.2.6		Install Site Instrumentation System
			1.7.2.7		ICDF Landfill Vadose Zone Monitoring Construction
			1.7.2.8		Place ICDF Landfill Clay Liner
			1.7.2.9		Place ICDF Landfill Secondary HDPE Geomembrane
			1.7.2.10		Construct ICDF Crest Pad Building
			1.7.2.11		Place ICDF PLDRS Geomembrane
			1.7.2.12		Place ICDF Landfill Primary GCL
			1.7.2.13		Place ICDF Landfill HDPE Primary Geomembrane
			1.7.2.14		Place ICDF Landfill Geotextile Cushion
			1.7.2.15		Place ICDF Landfill LCRS Drain Gravel

Work Breakdown Structure (WBS) Level					Cost Element Item
1	2	3	4	5	
			1.7.2.16		Place ICDF Landfill Leachate Collection Piping
			1.7.2.17		Place ICDF Landfill Operations Layer
			1.7.2.18		Place Evaporation Pond Base Soil (Rye Grass Flats)
			1.7.2.19		Place Evaporation Pond GCL
			1.7.2.20		Place Evaporation Pond Secondary Geomembrane
			1.7.2.21		Construct Evaporation Pond Crest Pad Building
			1.7.2.22		Place Evaporation Pond Geotextile Cushion
			1.7.2.23		Place Evaporation Pond LDRS Drain Gravel/Ops Layer
			1.7.2.24		Place Evaporation Pond Leachate Collection Piping
			1.7.2.25		Place Evaporation Pond Primary GCL
			1.7.2.26		Place Evaporation Pond Primary Geomembrane
			1.7.2.27		Place Evaporation Pond Sacrificial Geomembrane
			1.7.2.28		Reclaimation of ICDF and RGF
			1.7.2.29		Place Surface Course for Roads
			1.7.2.30		Construction Quality Assurance
		1.7.3			ICDF Construction (Cell 2)
			1.7.3.1		Assemble and approve work control/JSAs
			1.7.3.2		Mobilize Equipment and Personnel for Cell 2 excavation and screening
			1.7.3.3		Excavate Cell 2 and construct berms
			1.7.3.4		screening of gravel
			1.7.3.5		Mobilize Equipment and Personnel for Cell 2 construction
			1.7.3.6		Install Sediment and Erosion Controls
			1.7.3.7		Clear, Grub, and Strip Borrow Area
			1.7.3.8		ICDF Landfill Vadose Zone Monitoring Construction
			1.7.3.9		Place ICDF Landfill Clay Liner
			1.7.3.10		Place ICDF Landfill Secondary HDPE Geomembrane
			1.7.3.11		Place ICDF PLDRS Geomembrane

Work Breakdown Structure (WBS) Level					Cost Element Item
1	2	3	4	5	
			1.7.3.12		Place ICDF Landfill Primary GCL
			1.7.3.13		Place ICDF Landfill HDPE Primary Geomembrane
			1.7.3.14		Place ICDF Landfill Geotextile Cushion
			1.7.3.15		Place ICDF Landfill LCRS Drain Gravel
			1.7.3.16		Place ICDF Landfill Leachate Collection Piping
			1.7.3.17		Place ICDF Landfill Operations Layer
			1.7.3.18		Reclaimation of ICDF and RGF
			1.7.3.19		Place Surface Course for Roads
			1.7.3.20		Construction Quality Assurance
		1.7.4			SSSTF Construction
			1.7.4.1		SSSTF Construction Procurement
				1.7.4.1.1	Develop SSSTF RFP
				1.7.4.1.2	SSSTF Construction bid cycle
				1.7.4.1.3	Evaluate bid received on SSSTF RFP
				1.7.4.1.4	SSSTF Construction contract awarded
			1.7.4.2		SSSTF Construction
				1.7.4.2.1	Site Preparations
				1.7.4.2.2	Utilities
				1.7.4.2.3	Administrative Facility
				1.7.4.2.4	Truck Scale
				1.7.4.2.5	Decontamination Facility
				1.7.4.2.6	Soils Stabilization Treatment Unit
		1.7.5			ICDF Complex Groundwater Monitoring System
			1.7.5.1		Procurement for Groundwater Monitoring System
			1.7.5.2		Install Groundwater Monitoring Wells
			1.7.5.3		ICDF Groundwater Baseline Monitoring Sample Collection (4 rounds)
			1.7.5.4		ICDF Groundwater Baseline Monitoring Sample Analysis

Work Breakdown Structure (WBS) Level					Cost Element Item
1	2	3	4	5	
	1.8				**Reserved**
	1.9				**Reserved**
	1.10				**Program/Project Management**
		1.10.1			Program Management
		1.10.2			Project Management
		1.10.3			Construction Management

Appendix C

ICDF Complex Document Deliverables List

Appendix C

ICDF Complex Document Deliverables List

10 CFR 830.122, 2000, "Quality Assurance Criteria," *Code of Federal Regulations*, Office of the Federal Register, January 2000.

40 CFR 264.19, 2000, "Construction Quality Assurance Program," *Code of Federal Regulations*, Office of the Federal Register, July 2000.

48 CFR 970.7102, 1999, "DOE Responsibility," *Code of Federal Regulations*, Office of the Federal Register, October 1999.

15 USC 2601 et seq., 1976, "Toxic Substances Control Act," *United States Code*.

42 USC 4321-4361, 1969, "National Environmental Policy Act (NEPA) of 1969," *United States Code.*

42 USC 6921 et seq., 1976, Subtitle C, "Hazardous Waste Management," in "Resource Conservation and Recovery Act of 1976," as amended, *United States Code*.

42 USC 9601 et seq., 1980, "Comprehensive Environmental Response, Compensation, and Liability Act," *United States Code*.

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DOE-ID, 1991, *Federal Facility Agreement and Consent Order for the Idaho National Engineering Laboratory*, U.S. Department of Energy, Idaho Field Office; U.S. Environmental Protection Agency, Region 10; Idaho Department of Health and Welfare, December 1999.

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Appendix D

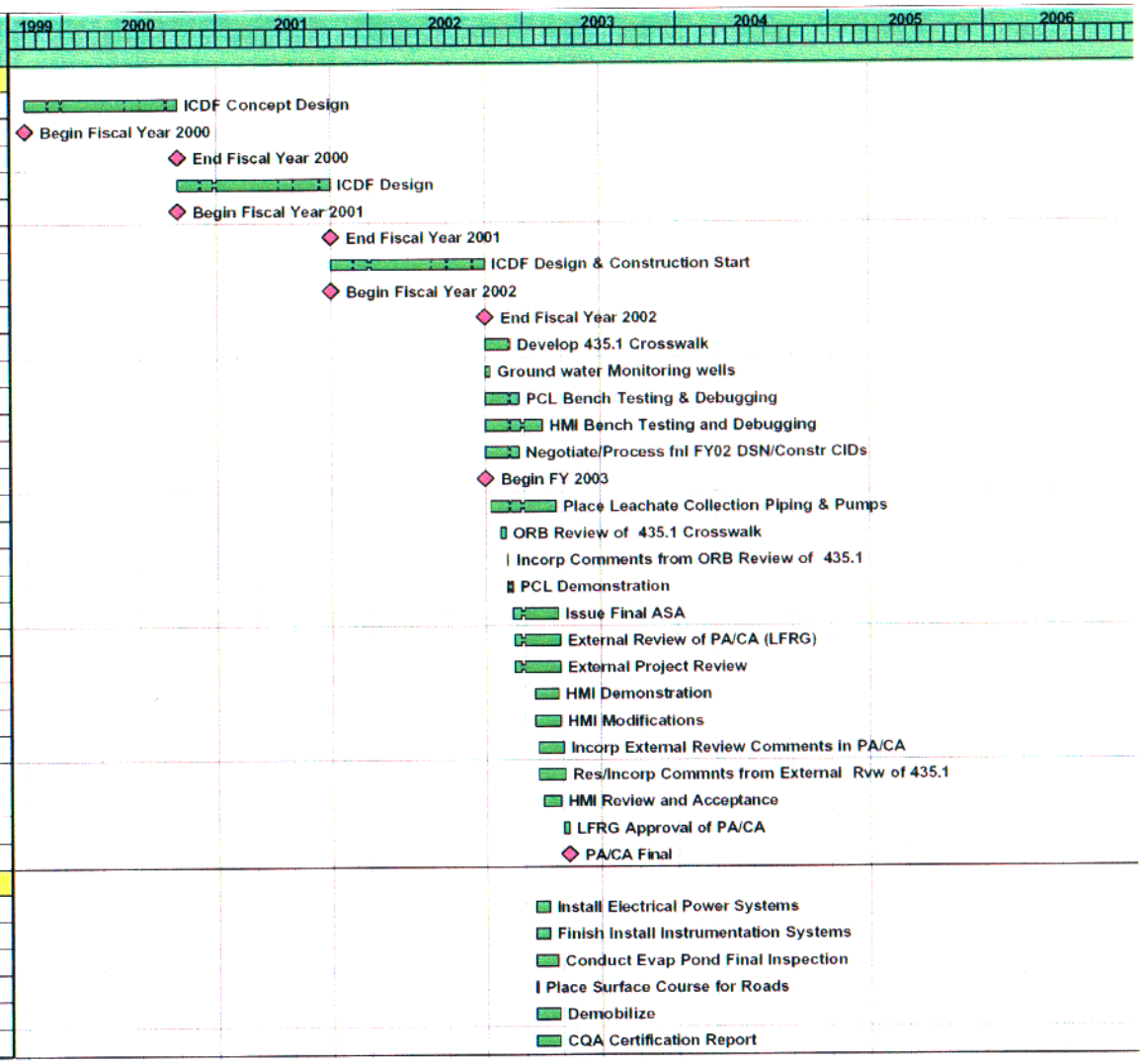
ICDF Complex Project Detailed Schedule

Appendix D

ICDF Complex Project Detailed Schedule

See the attached detailed schedule for the ICDF Complex Project

Activity Description	Early Start	Early Finish
01 ICDF Prior Year Schedule & Carryover		
ICDF Concept Design	01OCT99A	29SEP00A
Begin Fiscal Year 2000	01OCT99A	
End Fiscal Year 2000		29SEP00A
ICDF Design	02OCT00A	28SEP01A
Begin Fiscal Year 2001	02OCT00A	
End Fiscal Year 2001		28SEP01A
ICDF Design & Construction Start	01OCT01A	30SEP02A
Begin Fiscal Year 2002	01OCTQ1A	
End Fiscal Year 2002		30SEP02A
Develop 435.1 Crosswalk	01OCT02A	02DEC02A
Ground water Monitoring wells	01OCT02A	14OCT02A
PCL Bench Testing & Debugging	01OCT02A	19DEC02A
HMI Bench Testing and Debugging	01OCT02A	13FEB03A
Negotiate/Process fnl FY02 DSN/Constr CIDs	01OCT02A	19DEC02A
Begin FY 2003	01OCT02A	
Place Leachate Collection Piping & Pumps	13OCT02A	20MAR03A
ORB Review of 435.1 Crosswalk	06NOV02A	18NOV02A
Incorp Comments from ORB Review of 435.1	22NOV02A	22NOV02A
PCL Demonstration	25NOV02A	05DEC02A
Issue Final ASA	03DEC02A	24MAR03
External Review of PA/CA (LFRG)	03DEC02A	28MAR03
External Project Review	03DEC02A	28MAR03
HMI Demonstration	27JAN03A	24MAR03
HMI Modifications	27JAN03A	25MAR03
Incorp External Review Comments in PA/CA	03FEB03A	03APR03
Res/Incorp Commnts from External Rvw of 435.1	03FEB03A	08APR03
HMI Review and Acceptance	17FEB03A	28MAR03
LFRG Approval of PA/CA	04APR03	17APR03
PA/CA Final		17APR03
03 ICDF Cell 1 & E.P. Construction		
Install Electrical Power Systems	27JAN03A	28FEB03A
Finish Install Instrumentation Systems	27JAN03A	27FEB03A
Conduct Evap Pond Final Inspection	27JAN03A	20MAR03A
Place Surface Course for Roads	27JAN03A	31JAN03A
Demobilize	27JAN03A	24MAR03
CQA Certification Report	28JAN03A	24MAR03



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Critical Activity

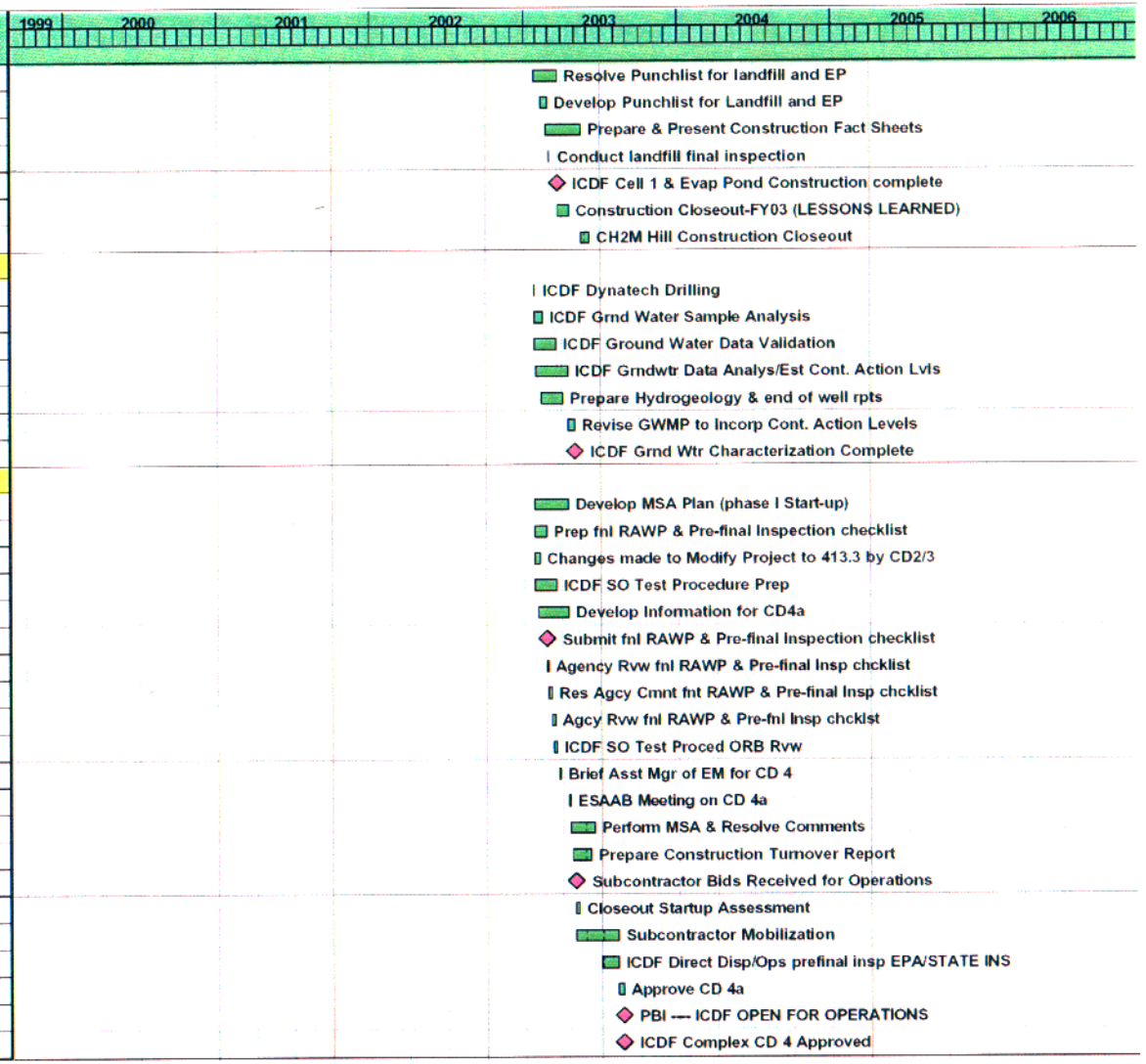
PEP3 Sheet 1 of 4

OU 3-13 ICDF PEP Rev 3.0

PEP Summary Layout 2

Date	Revision	Checked	Approved

Activity Description	Early Start	Early Finish
Resolve Punchlist for landfill and EP	28JAN03A	24MAR03
Develop Punchlist for Landfill and EP	10FEB03A	26FEB03A
Prepare & Present Construction Fact Sheets	24FEB03A	16MAY03
Conduct landfill final inspection	03MAR03A	03MAR03A
ICDF Cell 1 & Evap Pond Construction complete		24MAR03
Construction Closeout-FY03 (LESSONS LEARNED)	24MAR03	21APR03
CH2M Hill Construction Closeout	16MAY03	06JUN03
04 ICDF Groundwater Sampling & Analysis		
ICDF Dynatech Drilling	27JAN03A	27JAN03A
ICDF Grnd Water Sample Analysis	27JAN03A	13FEB03A
ICDF Ground Water Data Validation	27JAN03A	17MAR03A
ICDF Grndwtr Data Analys/Est Cont. Action Lvls	29JAN03A	15APR03
Prepare Hydrogeology & end of well rpts	11FEB03A	02APR03
Revise GWMP to Incorp Cont. Action Levels	16APR03	01MAY03
ICDF Grnd Wtr Characterization Complete		01MAY03
05 ICDF Start-Up		
Develop MSA Plan (phase I Start-up)	27JAN03A	17APR03
Prep fnl RAWP & Pre-final Inspection checklist	27JAN03A	24FEB03A
Changes made to Modify Project to 413.3 by CD2/3	27JAN03A	07FEB03A
ICDF SO Test Procedure Prep	27JAN03A	19MAR03A
Develop Information for CD4a	03FEB03A	14APR03
Submit fnl RAWP & Pre-final Inspection checklist		24FEB03A
Agency Rvw fnl RAWP & Pre-final Insp chcklist	25FEB03A	26FEB03A
Res Agcy Cmnt fnt RAWP & Pre-final Insp chcklist	27FEB03A	06MAR03A
Agcy Rvw fnl RAWP & Pre-fnl Insp chcklst	07MAR03A	14MAR03A
ICDF SO Test Proced ORB Rvw	10MAR03A	19MAR03A
Brief Asst Mgr of EM for CD 4	24MAR03	26MAR03
ESAAB Meeting on CD 4a	15APR03	21APR03
Perform MSA & Resolve Comments	21APR03	13JUN03
Prepare Construction Turnover Report	24APR03	06JUN03
Subcontractor Bids Received for Operations		01MAY03*
Closeout Startup Assessment	02MAY03	08MAY03
Subcontractor Mobilization	02MAY03	08AUG03
ICDF Direct Disp/Ops prefinal insp EPA/STATE INS	30JUN03*	08AUG03
Approve CD 4a	11AUG03	22AUG03*
PBI — ICDF OPEN FOR OPERATIONS		22AUG03
ICDF Complex CD 4 Approved		22AUG03



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Early Bar
Progress Bar
Critical Activity

PEP3 Sheet 2 of 4

OU 3-13 ICDF PEP Rev 3.0

PEP Summary Layout 2

Date	Revision	Checked	Approved

Activity Description	Early Start	Early Finish
Approve Start of Operations Cell 1	25AUG03	25AUG03
Complete 413.3 Activities		25AUG03
Begin Fiscal Year 2004	01OCT03*	
06 ICDF RA Report		
Prepare ICDF Complex RA Report	08JUN04	22JUL04
Prepare RA Report & Final Inspection Report	23JUL04	27AUG04
Resol EPA/IDEQ Comments Dft ICDF RA Report	30AUG04	28SEP04
Issue ICDF Complex RA Report		28SEP04
07 SSSTF Support Facilities		
Support facilities power upgrade	27JAN03A	07MAR03A
Administration Facility Fy03	27JAN03A	07APR03
Support Facilities Voice Paging System	06FEB03A	12FEB03A
Site Work/Paving FY2003	12FEB03A	25APR03
ICDF Support Facility Complete		07APR03
08 SSSTF Decontamination Facility		
Decon Building Construction	24MAR03	10SEP03
Stabilization Sys Proc/fab/Install	07APR03	09JUL03
Support Facility Air conditioning	23APR03	10SEP03
Develop Decon Bldg Punchlist	26JUN03	10SEP03
Develop Punchlist for Stabilization System	10JUL03	16JUL03
Resolve Pchlist Stabilization Sys	17JUL03	21JUL03
Stabilization Treatment System Complete		21JUL03
Resolve Decon Bldg Punchlist	30JUL03	10SEP03
DECON Facility complete		10SEP03
09 SSSTF Modified RD/CWP		
Modify RD/CWP using new design	07APR03	18APR03
ORB Review of Modified RD/CWP	21APR03	02MAY03
Incorp Commnts into Modified RD/CWP	05MAY03	16MAY03
Update & Transmit MOD to RD/CWP	19MAY03	20MAY03
Agency Review of Modified RD/CWP	21MAY03	23JUN03
Update &Transmit fnlModified RD/CWP to Agencies	23JUN03	23JUL03
Publish Final SSSTF RD/CWP	24JUL03	
10 SSSTF StartUp		
Develop Min Treatment O&M Procedures	24MAR03	16MAY03
Min Treatment S-O Test Plan	24MAR03	01MAY03
Dev Mgmt Self-Assessment Plan	21APR03	11AUG03
Min Treatment S-O Test Procedure Prep	02MAY03	22AUG03

Start Date 01OCT99
Finish Date 29SEP06
Data Date 24MAR03
Run Date 25MAR03 16:32

Early Bar
Progress Bar
Critical Activity

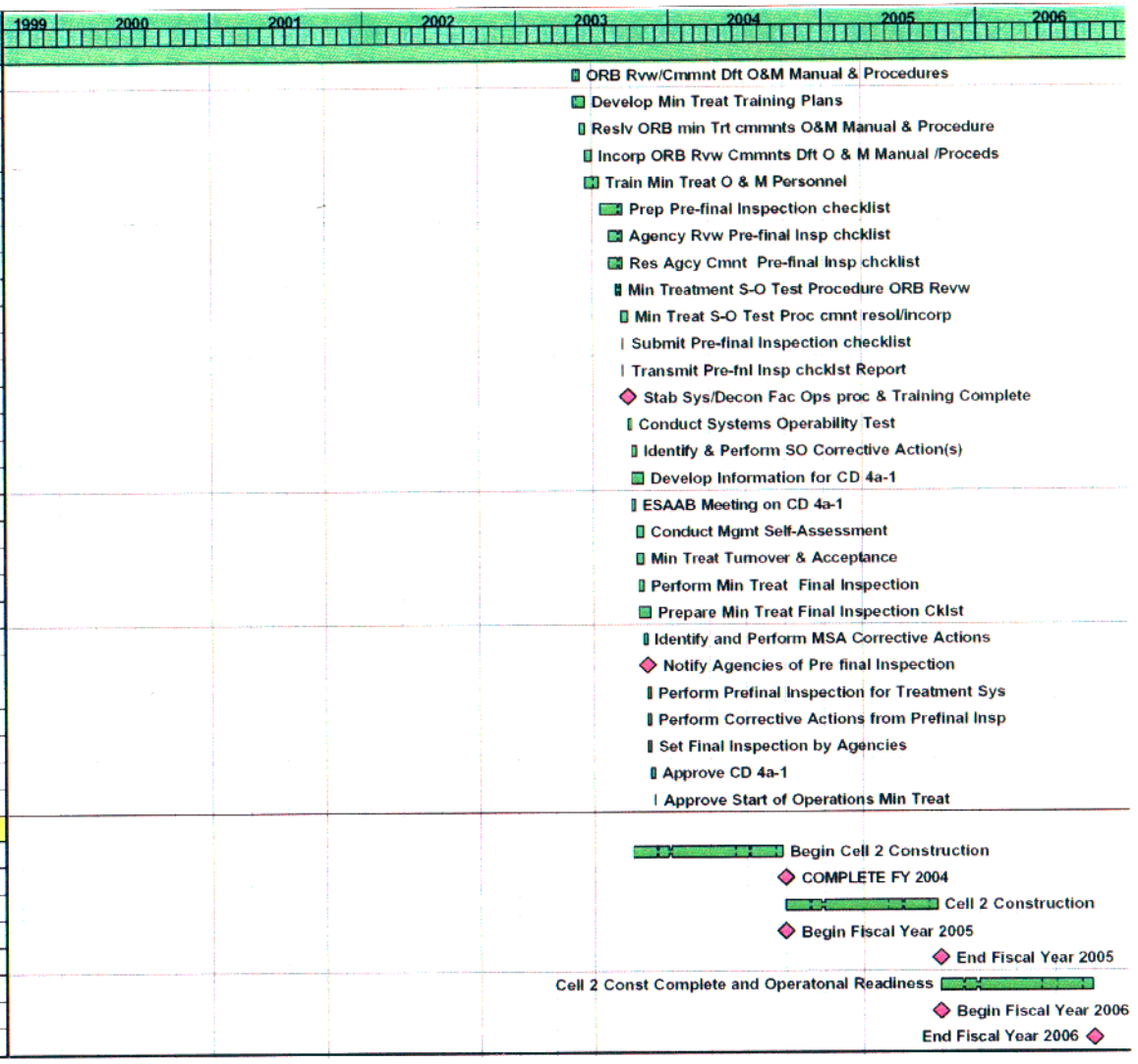
PEP3 Sheet 3 of 4

OU 3-13 ICDF PEP Rev 3.0

PEP Summary Layout 2

Date	Revision	Checked	Approved

Activity Description	Early Start	Early Finish
ORB Rvw/Cmmnt Dft O&M Manual & Procedures	19MAY03	02JUN03
Develop Min Treat Training Plans	19MAY03	16JUN03
Reslv ORB min Trt cmmnts O&M Manual & Procedure	03JUN03	16JUN03
Incorp ORB Rvw Cmmnts Dft O & M Manual /Proceds	17JUN03	30JUN03
Train Min Treat O & M Personnel	17JUN03	17JUL03
Prep Pre-final Inspection checklist	23JUL03	10SEP03
Agency Rvw Pre-final Insp chcklist	11AUG03	11SEP03
Res Agcy Cmnt Pre-final Insp chcklist	11AUG03	11SEP03
Min Treatment S-O Test Procedure ORB Revw	25AUG03	08SEP03
Min Treat S-O Test Proc cmnt resol/incorp	09SEP03	22SEP03
Submit Pre-final Inspection checklist	11SEP03	11SEP03
Transmit Pre-fnl Insp chcklst Report	11SEP03	11SEP03
Stab Sys/Decon Fac Ops proc & Training Complete		22SEP03
Conduct Systems Operability Test	23SEP03	29SEP03
Identify & Perform SO Corrective Action(s)	30SEP03	13OCT03
Develop Information for CD 4a-1	03OCT03	27OCT03
ESAAB Meeting on CD 4a-1	03OCT03	09OCT03
Conduct Mgmt Self-Assessment	14OCT03	27OCT03
Min Treat Turnover & Acceptance	14OCT03	27OCT03
Perform Min Treat Final Inspection	17OCT03	30OCT03
Prepare Min Treat Final Inspection Cklst	17OCT03	13NOV03
Identify and Perform MSA Corrective Actions	28OCT03	06NOV03
Notify Agencies of Pre final Inspection		06NOV03
Perform Prefinal Inspection for Treatment Sys	07NOV03	13NOV03
Perform Corrective Actions from Prefinal Insp	07NOV03	13NOV03
Set Final Inspection by Agencies	07NOV03	13NOV03
Approve CD 4a-1	14NOV03	20NOV03
Approve Start of Operations Min Treat	21NOV03	21NOV03
11 ICDF Cell 2 Construction & Operation Prep		
Begin Cell 2 Construction	01OCT03	22SEP04
COMPLETE FY 2004		30SEP04*
Cell 2 Construction	01OCT04	29SEP05
Begin Fiscal Year 2005	01OCT04*	
End Fiscal Year 2005		30SEP05*
Cell 2 Const Complete and Operatonal Readiness	03OCT05	29SEP06
Begin Fiscal Year 2006	03OCT05*	
End Fiscal Year 2006		29SEP06*



Start Date 01OCT99
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Early Bar
Progress Bar
Critical Activity

PEP3

Sheet 4 of 4

OU 3-13 ICDF PEP Rev 3.0

PEP Summary Layout 2

Date	Revision	Checked	Approved

Appendix E

ICDF Complex Project Cost Estimate

Appendix E

ICDF Complex Project Cost Estimate

Work Breakdown Structure (WBS) Level					Item	Estimate 65% Confidence Level	Estimate 85% Confidence Level
1	2	3	4	5			
1					**ICDF Complex Project**	**$46,233,923**	**$46,852,164**
	1.1				**ICDF Design**	**$7,997,811**	**$8,009,811**
		1.1.1			ICDF Conceptual (10%) Design	$683,630	$683,630
		1.1.2			ICDF Title I (30%) Design	$1,261,742	$1,261,742
		1.1.3			ICDF Early Dig and Test Pad Design	$540,747	$540,747
		1.1.4			ICDF 60% Design Components	$1,500,000	$1,500,000
		1.1.5			ICDF Title II (90%) Design	$3,819,692	$3,819,692
		1.1.6			Assess ICDF RD/CWP for construction of Cell 2	$192,000	$204,000
	1.2				**SSSTF Design**	**$4,162,320**	**$4,211,012**
		1.2.1			SSSTF Conceptual (10%) Design	$941,651	$941,651
		1.2.2			SSSTF Title I (30%) Design	$1,628,518	$1,628,518
		1.2.3			SSSTF Title II (90%) Design	$1,338,088	$1,338,088
		1.2.4			Soils Stabilization Treatment Unit Design		
			1.2.4.1		SSSTF Subcontractor develops Soils Stabilization Treatment Unit (SSTU) design	$158,063	$200,755
			1.2.4.2		Modification to SSSTF RD/CWP for SSTU developed	$64,000	$68,000
			1.2.4.5		Resolution of EPA and IDEQ comments on SSTU design	$32,000	$34,000

Work Breakdown Structure (WBS) Level					Item	Estimate 65% Confidence Level	Estimate 85% Confidence Level
1	2	3	4	5			
					comments on SSTU design		
	1.3				**Remedial Action Work Plan (RA WP)**	**$900,192**	**$916,792**
		1.3.1			ICDF Complex Remedial Action Work Plan (RA WP)	$900,192	$916,792
	1.4				**ICDF Complex Startup (SSSTF and Cell 1)**	**$3,204,100**	**$3,318,521**
		1.4.1			Develop ICDF Complex Waste Tracking System	$210,000	$220,500
		1.4.2			Develop ICDF Complex O&M Manual	$1,289,879	$1,326,852
		1.4.3			Develop DOE Order 435.1 Compliance Documents (crosswalk, PA, CA, Disposal Authorization Basis and Statement, etc.)	$150,000	$157,500
		1.4.4			Personnel Training	$112,000	$119,000
		1.4.5			Startup Assessment		
			1.4.5.1		Develop Startup Assessment Plan	$140,566	$144,595
			1.4.5.2		Conduct Startup Assessment	$93,710	$96,396
			1.4.5.3		Perform Corrective Actions from Startup Assessment	$791,663	$814,354
			1.4.5.4		Closeout Startup Assessment	$87,963	$90,484
		1.4.5			ICDF Complex Operation Prefinal Inspection	$38,400	$40,800
		1.4.6			ICDF Construction Inspections (cell 1)	$19,200	$20,400
		1.4.7			SSSTF Construction Inspections	$19,200	$20,400
		1.4.8			ICDF Complex Remedial Action Report		

Work Breakdown Structure (WBS) Level					Item	Estimate 65% Confidence Level	Estimate 85% Confidence Level
1	2	3	4	5			
					Report		
			1.4.8.1		ICDF Complex Operations Final Inspection	$30,720	$32,640
			1.4.8.2		ICDF Complex RA Report	$220,800	$234,600
	1.5				**ICDF Landfill Cell 2 Startup**	**$623,450**	**$651,109**
		1.5.1			Update ICDF Complex O&M Manual for Cell 2 Operations	$64,000	$68,000
		1.5.2			Personnel Training	$64,000	$68,000
		1.5.3			Startup Assessment (Cell 2)		
			1.5.3.1		Develop Startup Assessment Plan	$42,170	$43,378
			1.5.3.2		Conduct Startup Assessment	$28,113	$28,919
			1.5.3.3		Perform Corrective Actions from Startup Assessment	$237,499	$244,306
			1.5.3.4		Closeout Startup Assessment	$26,389	$27,145
		1.5.4			ICDF Complex Operation Prefinal Inspection (Cell 2)	$26,880	$28,560
		1.5.5			Remedial Action Report changes for Cell 2	$134,400	$142,800
	1.6				**ICDF Complex Fleet Equipment**	**$2,234,835**	**$2,277,758**
	1.7				**ICDF Complex Construction**	**$21,141,064**	**$21,471,533**
		1.7.1			ICDF Early Dig and Test Pad Construction Activities		
			1.7.1.1		2001 Construction on Cell 1 and Evaporation Pond		
				1.7.1.1.1	Excavation and construction activities	$1,209,693	$1,209,693

Work Breakdown Structure (WBS) Level					Item	Estimate 65% Confidence Level	Estimate 85% Confidence Level
1	2	3	4	5			
				1.7.1.1.2	Construction Quality Assurance	$90,000	$90,000
			1.7.1.2		ICDF Construction (cell 1, Phase I)		
				1.7.1.2.1	Mobilize personnel and equipment	$400,000	$400,000
				1.7.1.2.2	screening of gravel	$10,000	$10,000
				1.7.1.2.3	follow-up test pad and mixing system	$110,000	$110,000
				1.7.1.2.4	landfill and evaporation pond expanded excavation/buildup	$167,569	$171,005
				1.7.1.2.5	Construction Quality Assurance	$30,000	$30,000
		1.7.2			ICDF Cell 1 Construction (Phase II)		
			1.7.2.1		Mobilize Equipment and Personnel for Phase 2 Construction	$52,655	$92,162
			1.7.2.2		Install Sediment and Erosion Controls	$15,516	$15,835
			1.7.2.3		Clear, Grub, and Strip Borrow Area	$36,719	$37,472
			1.7.2.4		Construct Raw/Fire Water System	$298,468	$303,480
			1.7.2.5		Construct Electrical Power Supply System	$201,855	$206,961
			1.7.2.6		Install Site Instrumentation System	$300,000	$330,000
			1.7.2.7		ICDF Landfill Vadose Zone Monitoring Construction	$100,000	$110,000
			1.7.2.8		Place ICDF Landfill Clay Liner	$561,948	$573,471
			1.7.2.9		Place ICDF Landfill Secondary HDPE Geomembrane	$299,164	$305,298
			1.7.2.10		Construct ICDF Crest Pad Building	$131,127	$133,036
			1.7.2.11		Place ICDF PLDRS Geomembrane	$199,515	$203,606
			1.7.2.12		Place ICDF Landfill Primary GCL	$628,913	$641,810
			1.7.2.13		Place ICDF Landfill HDPE Primary Geomembrane	$299,164	$305,298

Work Breakdown Structure (WBS) Level					Item	Estimate 65% Confidence Level	Estimate 85% Confidence Level
1	2	3	4	5			
			1.7.2.14		Place ICDF Landfill Geotextile Cushion	$199,515	$203,606
			1.7.2.15		Place ICDF Landfill LCRS Drain Gravel	$202,968	$207,130
			1.7.2.16		Place ICDF Landfill Leachate Collection Piping	$80,154	$81,098
			1.7.2.17		Place ICDF Landfill Operations Layer	$447,221	$456,391
			1.7.2.18		Place Evaporation Pond Base Soil (Rye Grass Flats)	$80,926	$82,585
			1.7.2.19		Place Evaporation Pond GCL	$237,790	$242,666
			1.7.2.20		Place Evaporation Pond Secondary Geomembrane	$113,623	$115,953
			1.7.2.21		Construct Evaporation Pond Crest Pad Building	$122,798	$124,555
			1.7.2.22		Place Evaporation Pond Geotextile Cushion	$75,776	$77,330
			1.7.2.23		Place Evaporation Pond LDRS Drain Gravel/Ops Layer	$223,611	$228,196
			1.7.2.24		Place Evaporation Pond Leachate Collection Piping	$80,154	$81,098
			1.7.2.25		Place Evaporation Pond Primary GCL	$237,790	$242,666
			1.7.2.26		Place Evaporation Pond Primary Geomembrane	$113,623	$115,953
			1.7.2.27		Place Evaporation Pond Sacrificial Geomembrane	$113,623	$115,953
			1.7.2.28		Reclaimation of ICDF and RGF	$38,356	$38,841
			1.7.2.29		Place Surface Course for Roads	$226,106	$230,742
			1.7.2.30		Construction Quality Assurance	$550,000	$550,000
		1.7.3			ICDF Construction (cell 2)		

Work Breakdown Structure (WBS) Level					Item	Estimate 65% Confidence Level	Estimate 85% Confidence Level
1	2	3	4	5			
			1.7.3.1		Assemble and approve work control/JSAs	$76,800	$81,600
			1.7.3.2		Mobilize Equipment and Personnel for Cell 2 excavation and screening	$81,981	$82,932
			1.7.3.3		Excavate Cell 2 and construct berms	$563,528	$575,089
			1.7.3.4		screening of gravel	$10,000	$10,000
			1.7.3.5		Mobilize Equipment and Personnel for Cell 2 construction	$81,981	$82,932
			1.7.3.6		Install Sediment and Erosion Controls	$16,711	$17,053
			1.7.3.7		Clear, Grub, and Strip Borrow Area	$39,545	$40,356
			1.7.3.8		ICDF Landfill Vadose Zone Monitoring Construction	$108,279	$110,500
			1.7.3.9		Place ICDF Landfill Clay Liner	$605,195	$617,610
			1.7.3.10		Place ICDF Landfill Secondary HDPE Geomembrane	$322,187	$328,797
			1.7.3.11		Place ICDF PLDRS Geomembrane	$214,869	$219,277
			1.7.3.12		Place ICDF Landfill Primary GCL	$677,314	$691,210
			1.7.3.13		Place ICDF Landfill HDPE Primary Geomembrane	$322,187	$328,797
			1.7.3.14		Place ICDF Landfill Geotextile Cushion	$214,869	$219,277
			1.7.3.15		Place ICDF Landfill LCRS Drain Gravel	$218,588	$223,072
			1.7.3.16		Place ICDF Landfill Leachate Collection Piping	$86,371	$87,104
			1.7.3.17		Place ICDF Landfill Operations Layer	$481,638	$491,519
			1.7.3.18		Reclaimation of ICDF and RGF	$41,293	$41,772
			1.7.3.19		Place Surface Course for Roads	$452,212	$461,484

Work Breakdown Structure (WBS) Level					Item	Estimate 65% Confidence Level	Estimate 85% Confidence Level
1	2	3	4	5			
			1.7.3.20		Construction Quality Assurance	$592,295	$592,295
		1.7.4			SSSTF Construction		
			1.7.4.1		SSSTF Construction Procurement	$45,000	$47,250
			1.7.4.2		SSSTF Construction		
				1.7.4.2.1	Site Preparations	$929,883	$942,578
				1.7.4.2.2	Utilities	$1,049,401	$1,064,930
				1.7.4.2.3	Administrative Facility	$238,078	$241,388
				1.7.4.2.4	Truck Scale	$138,791	$141,536
				1.7.4.2.5	Decontamination Facility	$1,680,755	$1,702,320
				1.7.4.2.6	Soils Stabilization Treatment Unit	$1,053,754	$1,003,773
				1.7.4.2.7	Construction Quality Assurance	$83,214	$84,412
		1.7.5			ICDF Complex Groundwater Monitoring System		
			1.7.5.1		Procurement for Groundwater Monitoring System	$45,000	$47,250
			1.7.5.2		Install Groundwater Monitoring Wells	$1,543,079	$1,566,729
			1.7.5.3		ICDF Groundwater Baseline Monitoring Sample Collection (4 rounds)	$388,721	$394,665
			1.7.5.4		ICDF Groundwater Baseline Monitoring Sample Analysis	$451,206	$458,136
	1.8				**Reserved**		
	1.9				**Reserved**		

Work Breakdown Structure (WBS) Level					Item	Estimate 65% Confidence Level	Estimate 85% Confidence Level
1	2	3	4	5			
	1.10				**Program/Project Management**	**$5,970,151**	**$5,995,629**
		1.10.1			Program Management	$949,500	$949,500
		1.10.2			Project Management	$4,341,894	$4,364,058
		1.10.3			Construction Management	$678,757	$682,071